

CORNELL CHILD CARE CENTER OUTDOOR PLAYSCAPES:
A POST-OCCUPANCY EVALUATION

A Thesis
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by
Tammy J. Johnson
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ABSTRACT

The purpose of this study was to conduct a post-occupancy evaluation (POE) of the preschool outdoor playspaces at the new Cornell Child Care Center. It examines preschool children's behavior on specific playground elements during outdoor free play. Designer interviews, behavioral observations, and a teacher survey were used as diagnostic tools. This methodology allows for a comparative analysis of preschool children's behavior on specific playscape elements against the architectural and landscape designer's criteria and intent.

Observations were performed at the Cornell Child Care Center within the preschool outdoor playground at differing times of free play during the day and week. The study took place in upstate New York during the months of November through February. The research participants were 56 children enrolled in the Cornell Child Care Center preschool program, ranging in age from three to five years old with an equal mix of males and females and 90% Caucasian. All participants were selected by opportunity. Ten specific playground elements were chosen to be assessed during this study. At ten-second intervals, observed participant behavior was coded for each element. Number of children, date, time, temperature, and weather conditions were also recorded for each observation day.

The initial assumption of this research was that the observations and teacher ratings of the playground elements would be equivalent to the architect's design intent for each element. Results from this study are expected to aid in better communications between designers and early childhood educators, and future decisions and policies regarding early childhood outdoor play spaces. Specifically, the findings from this

post-occupancy evaluation will provide feedback to Cornell University, Bright Horizons, and Horizons Design, Inc.

Overall, the results from observations did not match the design intent. The design intent for social behaviors such as solitary, parallel, and group interaction were of mixed results overall, and only two fully matched the intent of the designer. Many of the elements were designed to bring out play behaviors such as constructive, exploratory, and dramatic play and games with rules. However, the vast majority of observed play behavior was functional. The results from the teacher surveys were on the whole closer to the design intent.

Keywords: design, play, playground, post-occupancy, pre-school.

BIOGRAPHICAL SKETCH

Tammy Johnson was born in Ithaca, New York. She studied Business Management as an undergraduate at Ithaca College. She has worked for Cornell's Project Design and Construction for the past ten years and has enjoyed her studies in the Facility Planning and Management Masters Program.

I dedicate this thesis to my daughter, whose love and patience prevailed throughout.

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CHAPTER ONE:

INTRODUCTION AND LITERATURE REVIEW

INTRODUCTION

Throughout the last two decades there has been a rekindled interest in the design of outdoor play environments and the impact of that design on children's development. In the 20th century we have seen growth in the area of expert professionals specializing in children and childhood, parenting, and child care. This has resulted in children and childhood being placed under the microscope (Hendricks, 2001). There has been ample research into each distinct category of child development, including physical, cognitive, social, and emotional development. The focus of this paper is a post-occupancy evaluation of a playground. The goal of the post-occupancy evaluation is to see how closely the architect's design intent matches the social interaction and play behavior patterns of the children who use the playground.

The "self" is the most general outcome of socialization. The development of the "self" enables the child to become self-regulating and thereby capable of coordinating his or her activities with others (Handel, Cahil, & Elkin 2007). One of the ways in which this outcome can be accomplished is through play. Playing with peers allows young children to build social understanding and relationships (Glover, 1999). Furthermore, play in outdoor settings has additional positive effects for children. Natural elements provide for open-ended play that emphasizes unstructured creative exploration (White & Stoecklin, 1998). It is the linkage of social interaction, play, and nature that creates excellent opportunities for development.

This study focuses on the relationship between playground elements and their influence on children's social and cognitive development by conducting a post-

occupancy evaluation of an existing child care center. The primary research question asks what effect does the designer's selection of play elements for a playground have on the social interaction and cognitive play behaviors of pre-school aged children? To gain a further understanding of children's development, play, and playground design, it is important to start by defining play.

LITERATURE REVIEW

In addition to defining play, this chapter describes a historical and modern day view of the child including selected trends about childhood and play today. It demonstrates the role of play in children's development and why the physical environment is an important factor.

DEFINING PLAY

Play is such an intrinsic part of being human that it is difficult to get the scientific distance to study it (Hendricks, 2001). Defining it may be even more challenging. Mark Twain states, "Play is what the body wants to do, work is what the body is obliged to do (Johnson, Christie & Wardle, 2005, p. 12)." From the child's perspective, Steglin (2005, p. 77) states, the opportunity to play is an invitation that turns into a "self-fueled, synergistic, inherently rewarding, but not necessarily rewarded process called play." Another definition from Froebel, a German pedagogue, describes play as the one free expression of what is in a child's soul (Butler, Gotts, & Quisenberry, 1978).

According to Fromberg (2002) play is voluntary, meaningful, symbolic, rule-governed, pleasurable, and episodic. When play is voluntary it is of the child's own choice and he or she is fully engaged and well-focused. Meaningful play occurs when it has roots in the child's world. Symbolic play involves the use of objects in a

different manner than they were intended. When play is rule-governed, rules of engagement exist. Pleasurable play is fun and enjoyable. Finally, when play is episodic, there is no formal beginning, middle, or end.

In essence, play is an inner experience, a feeling of freedom to deal with reality on one's own terms. It allows one to live in the present, forget the past, and suspend the future (Johnson, Christie & Wardle, 2005). This not only applies to children, but also to adults. Not only is play fun and enjoyable, it is needed for a healthy and balanced life and is basic to human nature (Johnson et al. 2005).

HISTORICAL VIEW OF THE CHILD

In Puritan times of eighteenth century England, a common image portrayed children as a seedbed of sin, intrinsically evil or depraved. Their educators should be strict disciplinarians and aim to break the will or tame the beast (Johnson et al. 2005). Christian Puritans believed by keeping children away from play and focused on the Bible and other responsibilities, children were safe from the enemy. When the early 1800's arrived, a new view of the child came into being. Children were now seen as innocent and needing protection, a blank slate awaiting imprints from their environments (Johnson et al. 2005). During this era, the American people began taking a greater interest in play and its benefits to social and physical development. This interest was complimented by furthered research in the early and mid-twentieth century. Researchers such as Parten, Piaget, and Smilansky developed theories of approaches to play. Johnson et al. (2005) states, that in these modern theories, young children are viewed as immature and primitive forms of an ideal individual. Therefore, play is necessary and contributes to individual identity and preparation for adulthood. This leads us to postmodernist reactions which challenge their modernist predecessors. The most influential theory of this era was critical theory which views children as a

direct result of power structures. Critical theorists favor pedagogical approaches that give children control over their own learning, that are closely linked to their own cultural experiences, and that help children to perceive and address inequalities in their school and society (Johnson et al. 2005). Since the 1700's all of these theories have influenced how we view, understand, and respond to children's play behavior.

TODAY'S VIEW OF THE CHILD

Today, as we begin the 21st century, it is argued that young children are given less time to play. Glover (1999) believes that play is displaced by other activities and that our changing physical and social environments limit children's play opportunities. There is a concern that childhood play is seriously undermined and that without adequate opportunities for play, young children's development and learning will be seriously hampered.

Another view of the child today is symbolic of Stremmel's notion of the hurried-child. He states, the transformation of childhood through the ages suggests that what it means to be a child is culturally, historically, theoretically, and philosophically complex (Fu, Stremmel, & Hill, 2002). Parents today may find themselves directing their children in the morning in order to get to school and work, then directing them after work through homework and bedtime rituals, not to mention directing many other activities involved in their busy lives. Founded by Loris Malaguzzi (1920 – 1994), the Reggio Emilia approach to early education has gained international repute in the last two decades. This approach advises to go at the child's pace, respect children as partners in inquiry, and never forget and outgrow our own childhood (Fu et al. 2002). The 21st century should be the century when it becomes acceptable to be a lifelong player – and recognize that players often enjoy a long life (Hendricks, 2001).

TODAY'S TRENDS OF PLAY

There are differing ideas of what today's trends really are. The three that are most pertinent to this discussion are obesity, play technology, and globalization. All three trends influence our society and have an effect on today's developing child.

Today, too much sedentary activity, not enough exercise, and unwise food choices has created serious health problems in young children. Stegeline (2005) notes that childhood obesity is linked to three potentially critical health problems: high blood pressure, Type II diabetes, and coronary heart disease. Over the last 30 years, childhood obesity has more than doubled for children ages 2-5 and 12-19, and more than tripled for children ages 6 – 11. (Stegeline, 2005).

Another study on prevalence of overweight and obesity in the United States was held from 1999 – 2004. Results showed an average of 17.1 percent of US children and adolescents were considered to be overweight (Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006). The percentage of overweight female children rose from 13.8 percent in 1999/2000 to 16 percent in 2003/2004 and the percentage of overweight male children rose from 14 percent in 1999/2000 to 18.2 percent in 2003/2004.

Rapidly increasing, this epidemic is fueled by the elimination of recess, reduction of physical education requirements, and elimination of some sports in many early childhood education programs as well as in elementary and secondary schools (Johnson et al. 2005). While healthy food choices have recently become available, the federal government has been allowing junk food such as pizza, hamburgers and french fries as well as soda to be available in elementary schools (Johnson et al. 2005). Today, activity, exercise, and dietary choices are based on an American lifestyle that has changed drastically since the hard physical labor of earlier times when farming, mining, wood cutting, and cattle herding were common occupations and chores (Johnson et al. 2005).

Our understanding of the importance of play as physical activity for children appears to have run into competing contemporary forces (Frost, Wortham & Reifel, 2008). The resolution needs to come from a multifaceted approach including governments, community, health care, schools, and parents. We need to provide children with regular physical activity so they do not become obese as children, as well as develop a positive disposition toward physical activity (Johnson et al. 2005).

Another notable, yet controversial trend is the increase in play technology. No other era in history has provided the range of electronic play opportunities for children, including online games and virtual settings for socialization (Frost et al. 2008). Frost et al. (2008) explains that television and other electronic media contribute to play, providing ideas to mimic and objects for play. Today a wider variety of toys and games are available and easily accessible from stores or online. These include new smart toys and Baby Einstein products which are much more advanced than toys from decades past. While these are considered innovative implications of increased play technology, some believe technology can be harmful to the development of children. For example, technology can flood the child's mind with sounds and images lessening the opportunity to use his or her own imagination creating his or her own images. As an essential conclusion, it is argued that television detracts from the acquisition of literacy (Frost, 1992). In addition, Frost (1992) notes that research on the effects of television on children paints an increasingly gloomy picture. Television heroes are replacing parents and public leaders as role models. During the 1980's the American Psychiatric Association, National Parent-Teachers Association, U.S. Surgeon General, and the National Institute of Mental Health all concluded that viewing television violence increases violence and aggression in children and adults and the effects are long term (Frost, 1992). Recently, a large-scale longitudinal study provided converging evidence linking frequent exposure to violent media in childhood with

aggression later in life, including physical assaults and spouse abuse (Anderson, Berkowitz, Donnerstein, Huesmann, Johnson, Linz, Malamuth & Wartella, 2004).

The third trend is globalization. Globalization has affected many areas of our lives, including play and people's beliefs and attitudes about play. According to Johnson et al. (2005), play has changed dramatically in recent decades due to movies, radio, television, and the Internet. The increase in telecommunications gives individuals both a global identity and local identity in which we become more multicultural. One effect has been increased levels of international discourse about acceptable policies and practices related to children's play (Johnson et al. 2005). A significant example of this, Johnson et al. (2005) notes, is the effort by the United Nations' Convention of Children's Rights to achieve universal protection and respect for children.

One issue of globalization involving play is the growing number of immigrant children. While educators in our preschools try to remain cognizant of diverse cultural roots, language barriers often represent a challenge. Additionally, cultural conflicts exist that involve children's play and adults' ideas and attitudes about play. Trends that have caused some consternation in many countries are the proliferation of toy industry marketing worldwide, the global spread of media-linked playthings, and the identical and cheap plastic toys children obtain on purchasing child-size meals at omnipresent fast-food chains (Johnson et al. 2005). Countries are asking if the growing popularity of different play forms and objects associated with a new global self-identity cause a harmful shedding of traditional forms of play and games in indigenous cultures (Johnson et al. 2005).

Enriching or giving positive content to the process of globalization is a challenge that we face in the twenty-first century. Our belief is that in undertaking this important project of our postmodern era, play will be essential (Johnson et al. 2005).

PLAY'S ROLE IN DEVELOPMENT

Play has a unique role in the development of the child. Therefore it is important to understand how play contributes to each aspect of development including cognitive, social, and physical development.

Biologically speaking, play is a mediator of brain development, and by extension, child development. It is able to mediate the development of cognitive systems because of its intermodal qualities. When children play, they activate the neocortex (the thinking center of the brain) and the amygdale (the emotional center of the brain). Play is important because it reflects development, reinforces development, and results in development (Johnson et al. 2005). At birth, the child's mind is prepared to experience a multitude of stimuli. In the first thirty-six months of life the average child's brain makes approximately one quadrillion synaptic connections, but by age three, brain development changes by reducing connections and eventually drop to 500 trillion by age ten (Johnson et al. 2005). This is important because early synapses that are not used are eliminated as the brain relies on frequently used and increasingly sturdy synaptic pathways (Johnson et al. 2005).

Cognitive development, the development of the mind, is one of the key domains of child development research. Empirical research has demonstrated that beneficial effects of play include the development of language skills, problem solving, perspective taking, representational skills, memory, and creativity (Thompson, 2004). Language development, for example, is a rapid learning process for young children. Thompson (2004) notes that three year olds experience a "vocabulary explosion" that will result, by age six, in a lexicon of more than ten thousand words. Stegeline (2005) adds that according to brain research, younger children need physical activity, hands-on activities that develop large and fine motor skills, opportunities for eye-hand coordination activities, auditory and visually stimulating environments, and consistent

daily routines that actively engage the child both in the home and preschool environments.

During the pre-school years, children increasingly understand themselves as individuals as well as part of a social world (Frost et al. 2008). Since play is able to mediate social development, it becomes a key part of the child's social skill set which includes taking turns, sharing, and cooperating with other children. Interaction or socialization with others is essential for healthy development. The single best childhood predictor of adult adaptation is not IQ, not school grades, and not classroom behavior, but rather the adequacy with which the child gets along with other children (Frost et al. 2008).

According to some theorists, play is considered vitally important for social and emotional development. Play has a significant role in self-awareness, emotional differentiation, and regulation (Johnson et al. 2005). Self-awareness is the child's awareness of him or herself as an individual. Emotional differentiation is the ability to function in a self-directed manner separate from family. Regulation is the child's ability to keep his or her temper and maintain control over desires to lash out. Self-regulation of emotions is awareness and understanding of feelings – as a result of greater understanding, children are able to initiate behaviors that permit them to cope (Frost et al. 2008).

Play is also linked to social competence. In the area of pretend play, research reveals that pretend and dramatic play strengthens the child's understanding of the real world and provides opportunities for imagination to develop (Stegelin, 2004). Through negotiation during play, children develop mental and emotional mastery and learn cooperation and leadership skills. This allows them to simplify a complex world and make otherwise complex and frightening events manageable and comprehensible (Frost et al. 2008). The negotiation of social pretend play with peers requires many

skills. Each child must formulate and express his or her play ideas so that the partner can understand his or her notions for roles and scripts. Given these requirements for play it is not surprising that several researchers assume a theoretical link between social pretend play with peers and social competence with peers. Children who can engage in more harmonious and complex social pretend play are considered the more socially competent (Howes, Unger & Matheson, 1992).

Social pretend play is considered a marker of social competence. Three functions of social pretend play are: 1) the communication of meaning through mastery of social pretend forms (central function in toddler period); 2) expressing and exploring issues of control and compromise by negotiating social pretend play meanings and scripts (early preschool); 3) exploring issues of intimacy and trust within social pretend play (older children). While there may be some overlap, there lies a single most important function of social pretend play within each specific developmental period (Howes et al. 1992). Furthermore, Howes et al. (1992) explains that social pretend play between peers is still not smooth and easily flowing at 30 -36 months. Partners spend endless amounts of time assigning and negotiating play roles and themes. This negotiation functions as a means for children to explore issues of control and compromise.

Physical development during pre-school years includes refinement of gross-motor skills, fine-motor skills, and perceptual-motor skills. Gross-motor development includes locomotor dexterity, which requires balance and movement, and upper-body and arm skills. Fine-motor development includes use of the hands and fingers. Lastly, perceptual-motor development refers to the child's developmental ability to interact with the environment combining use of the senses and motor skills (Frost et al. 2008). These skill sets can be developed through directed or free play.

The growth of the body includes physical size, motor coordination, and health. Studies have found positive effects of play on children's physical development including muscle development, coordination, and obesity prevention (Thompson, 2004). Physical activity through play may also alleviate stress (Stegelin, 2005).

THE PHYSICAL ENVIRONMENT

The environment of early experience shapes the opportunities and risks that young children encounter (Thompson, 2004). This includes the physical environment, the biological environment, and the social environment. The child's physical environment can have a profound effect on development and it provides the child with many opportunities. For example, the physical environment can liven up young children's emotions, support the child's interest in playing with friends, making new discoveries, and learning about new things. It also provides the opportunity to exercise individual literacy ideas and skills (Roskos & Christie, 2004). The biological environment, (which begins prenatally) according to Thompson (2004), affects development through the quality of early nutrition, health care, immunizations, sensory screening, and protection from dangerous drugs, viruses, and environmental toxins. The social environment includes parents, care-givers, peers, and teachers.

Some neighborhoods and communities, whether urban, suburban, or rural, have many features that are assets for play and child development. Others are lacking in this regard and seem to have "play allergies" (Johnson et al. 2005). These "play allergies" cause parents to be adverse to play if they are unable to connect with children and if neighborhoods try to be child-proof. Johnson et al. (2005) explains that urban and suburban life today often removes children from public spaces and public life, putting them in segregated age cohorts, adult-organized and adult-controlled activities. Many neighborhoods that have been neglected and are now run-down, want

to be healthy again. According to Johnson et al. (2005), communities, regardless of socioeconomic status, need to have a shared intergenerational commitment to support children and youth by making where they live a safe place and one that is conducive to their learning and development.

Jim Greenman attempts to describe a holistic answer to what children need in terms of a play environment: places that are rich in experience, rich in play, rich in teaching, rich with people, and places to be significant (Johnson et al. 2005). A place rich in experience provides children with opportunity to explore the natural and human-made world (Johnson et al. 2005). It is a place where the child can expand his or her world using various materials such as water, sand, stones, leaves, animals, and blocks. Places rich in play are those designed to encourage play; places with enough space for physical and rough and tumble play, appropriate materials for dramatic play, and enough materials to encourage play across all domains (Johnson et al. 2005). A quote from Jim Greenman sums up a place rich in teaching, “Children need teachers who know what children need is to have their questions answered, not the teachers. Teachers who stimulate more questions than they directly provide are truly teaching” (Johnson et al. 2005 p.167).

Early childhood programs are taking the place of children’s experiences in neighborhoods, on the farm, and in local stores and shops. Therefore, we must bring plenty of people - diverse in race and ethnicity, age, profession, and ability and disability into our programs (Johnson et al. 2005). This will achieve places rich in teaching. Finally, children need a place to be significant. They need a place where they can be empowered in activities in which others depend on them. From a play perspective, Johnson et al. (2005) notes, that this sense of responsibility will help children to change roles in their play and help them nurture younger and less sophisticated players. It will teach the children how to set up the environment to

enhance play, and show them how to return play materials to their storage places. All these places help shape an environment that supports teachers' working, interacting, and playing with children holistically.

CHAPTER TWO:

PLAYGROUNDS

In discussing the importance of play and the play environment in children's development, outdoor play is particularly significant. This chapter illustrates the history of playgrounds and discusses the importance of playground design.

HISTORY OF PLAYGROUNDS

Patterned after German playgrounds, in 1821 the first formal playgrounds in the United States were called outdoor gymnasias and were originally designed for older boys (Frost et al. 2008). Table 2.1 shows the chronology of early American playground development.

The idea of playgrounds really took hold when it was discovered that male children growing up in the 19th century in industrial cities did not meet basic physical tests for entering military service. The wars at the beginning of the 19th century did much for the development of public playgrounds (Hendricks, 2001). It wasn't until the 1920's that the nursery school was established as its own entity (Johnson et al. 2005). At that time, Johnson et al. (2005) reminds us that these playgrounds consisted of natural grassy areas with plants and trees, animals and nature, a playhouse, and wading pool, and very limited commercial equipment.

Playgrounds in the 1930's and 40's were generally expansions of the playgrounds established in earlier decades that were recommended by the Committee on Standards in Playground Apparatus. For preschool age children, chair swings, sandboxes, small slides, and simple low climbing devices were recommended. There was also the introduction of what Lady Allen of Hurtwood labeled the "Concrete Pipe Period", when concrete and pipe constructions became popular (Wortham, 1985).

Table 2.1: Chronology of Early American Playground Development.

Year	Event
1821	First outdoor gymnasium at the Salem, MA Latin School.
1825	First outdoor playground and gymnasium with supervision and instruction, Round Hill School, Northampton, MA.
1826	First public outdoor gymnasium in Washington Garden, Boston.
1825-72	Period of relatively little activity.
1872	First legislative action recognized to purchase land for playgrounds, Brookline, MA.
1876	First park playground, Washington Park, Chicago.
1887	First state law authorizing small parks, NYC. First sand gardens established in Boston, marking the beginning of the playground movement.
1889	First free, equipped, supervised outdoor gymnasium for public use, Charlesbank, MA (for men and boys).
1890	First NYC playground.
1893	First Providence, RI playground.
1894	First Chicago playground with modern equipment. Hull House .
1896	Northwestern University, Chicago, opened extensive scale playground, equipped with apparatus.
1898	First Minneapolis playground by Improvement League, in school yards. First Denver playground, by women's club, on borrowed land.
1899	First municipal playground, in NYC, resulted from laws of 1895.
1903	Creation of the South Park, Chicago, recreation center idea.
1904	Formation of the Department of Public Recreation of the American Civic, the first organized national effort on behalf of playgrounds.
1905	Opening of the first South Park recreation centers, Chicago.

Source: Frost, 1992.

Table 2.1 (Continued)

Year	Event
1906	Play festival and field day for country children (Organization of the Playground Association of America), New Paltz, NY.
1907	First outdoor play festival, at Chicago on closing day of the first convention of the Playground Association of America.
1908	Beginning of extension work by the University Of Missouri Department of Physical Education to spread playgrounds and physical training to all towns and cities in Missouri. Playgrounds Congress by the Playground Association of America, NYC.

Shortly thereafter issues of safety came into play and protective surfaces, gates, and fences were added. Playground safety is an even bigger issue today. At one time, tall and massive jungle gyms were made of steel, iron, and wood. One may see some of those materials today, but with smaller amounts of steel and iron, and at lower heights. The modern era of playground design is dominated by the influence of U.S. Consumer Product Safety Commission guidelines and ADA accessibility guidelines (Johnson et al. 2005).

Good outdoor play does not happen by chance. In fact, what was once taken for granted – that children get plenty of exercise and opportunities to play outdoors – is no longer true (Sutterby & Thornton, 2005). Lack or loss of outdoor play has various causes such as safety concerns, accountability, overcommitment, and the elimination of recess in school schedules. Safety, as discussed previously, has been a challenge for decades. However, today, increased crime, traffic, and pollution can influence parents to keep their children off playgrounds. The No Child Left Behind movement and its accompanying high-stakes testing has resulted in removal of recess in more than sixteen thousand US schools (Sutterby & Thornton, 2005). In addition, in the ever so hurried world, there seems to be no time for play. So what's all the fuss?

If everyone understood how important outdoor playgrounds are, life could be different for children today. Americans tend to underestimate the importance of play by considering it discretionary rather than essential to child development (Shell, 1994). We've discussed how play, in general, is beneficial, but there are physical and neurological benefits that only outdoor play can provide. Outdoor play provides a better opportunity to engage in large motor skill play. It offers the possibility to climb, swing, run, ride trikes, and practice balancing in a wide open space. Furthermore, the first region of the brain to fully develop is the sensorimotor cortex. Its growth hinges upon large-scale physical movement, up until the age of 11 when development starts a new phase (Sutterby & Thornton, 2005).

PLAYGROUND DESIGN

Playground design is often carried out by persons who are knowledgeable about child development but not about physical space design. Conversely it may be carried out by physical space designers who know very little about child development or play (Hendricks, 2001). When designing a playground, one must consider which type is an appropriate fit for the purpose and need of the playground. According to Johnson et al. (2005), there are traditional, creative, adventure, modern, and natural playgrounds. A traditional playground is typically a flat, large, open area with hard surfacing (dirt, asphalt, or concrete) equipped with independent steel structures (Michaels, 2001). Creative playgrounds link different single pieces of playground equipment into large structures which often include platforms, ladders, slides, bridges, swings. They may also include a variety of tire nets, climbing apparatus, climbing ropes, steps, and pulley slides. (Johnson et al. 2005). Adventure playgrounds, mostly seen in Europe, are similar to creative playgrounds in that the equipment consists of basically scrap materials, however, the children do the constructing. Johnson et al.

(2005) describes adventure playgrounds as large fenced-in areas where children may build dens out of recycled materials, have bonfires, cook in the open, dig holes, garden, or play with sand, water, and clay. Modern playgrounds attempt to combine the benefits of the previous three.

While in many ways playgrounds look alike around the world, there are some local differences in design, supervision, and construction. For example, it is a standard demand in Denmark that good play areas are those where children can get away from the adult supervisor. In this case there is a concern that childhood has become too supervised, that children are always being watched by adults and it is felt that this is not a healthy situation for children (Hendricks, 2001). In the United States, by code, this is an unacceptable practice. These are two different views of adults and children on the play yard – and each is to be respected as part of the design criteria.

Outdoor playground environment design requires reasonable competence in both the natural sciences of the environment and the social science of childhood as well as design (Hendricks, 2001). One important consideration of playground design is circulation. Ideally, children should have access directly to the outdoors from the classroom/ playroom so that outdoor activities can be spontaneous (Maxwell, 1998). Other considerations, according to Maxwell (1998), include close linkage of equipment pieces together to promote continuous movement and social interaction; use of flexible materials such as loose parts; graduated challenges, and a variety of experiences ensuring that each child will find something to do and encourage more than one type of play and enhancing learning.

There are a number of ways to accomplish these considerations. For example, Curtis and Carter (2003) suggest approaching the outdoor space as an extension of the classroom for investigating, feeling powerful, and building relationships. Encouraging constructive and dramatic play, Maxwell (1998) also suggests the use of the following

materials: old steering wheels, puppet theater or stage, wooden barrels of different sizes, wooden spools, assorted containers, paint and brushes, sandpaper, nuts, washers, bolts, assorted wood blocks, interlocking plastic blocks, tricycles, wagons, wheelbarrows, pedal cars, shovels, and rakes. Additionally, Greenman (1998) suggests selecting materials that are diverse, easy to play with, and simple in design such as large blocks, transportation toys, art supplies, construction materials, materials for water play, and materials for dramatic play. Use of these portable materials, or loose parts, engage the child's imagination where they can see themselves as inventors (Curtis & Carter, 2003). Furthermore, open-ended materials allow children choices and independence, making things without preconceived ideas (Drew & Rankin, 2004).

Children need flexible materials such as water, sand, and loose parts to build with, as tools of communication and interaction. Yet most playgrounds have little beyond pieces of manufactured exercise equipment selected from catalogs – children don't need equipment, they need opportunity (Shell, 1994). Limiting outdoor playgrounds to gross motor activities and manufactured equipment falls short of the full potential that the outdoors has to offer. Such limitation denies the opportunity to experience the entire natural outdoors which includes vegetation, animals, insects, water, and sand; not just the sun and air that manufactured playgrounds offer (White & Stoecklin, 1998).

This leads us to positive natural elements. Envision a magnificent tumble of color and fragrance, roses, vegetables, and flowering plants. It not only catches the eye but soothes (Shell, 1994). Exposure to nature has been shown to alleviate stress and promote health (Chesky, 2001). These considerations demonstrate the importance of having a broad knowledge base when designing a playground.

In addition, children exhibit joy in their make-believe play and one way to accomplish this outdoors is to create a cozy hobbit home front. For example, a garden

setting framed by trees and flowering shrubs can define a setting for children and adults to relive time-honored fairy tales through reading aloud and sharing stories (Talbot & Frost, 1989).

A children's garden is a great way for children to learn about the outdoors. It enables them to explore and discover the natural world of flowers, vegetables and wildlife. Gardening is also an excellent way of learning how to balance the four elements to create life (Talbot & Frost, 1989). What is more magical than the growth process (Talbot & Frost, 1989)? Photographs of children's gardens are shown in Illustration 2.1, Illustration 2.2, and Illustration 2.3.



Illustration 2.1: Children's Garden at Virginia Western College, Virginia.
Source: viriniawestern.edu

Illustration 2.1 shows the Children's Garden at Western College in Virginia. It has a plant zoo showcasing 70 plants with animal names such as Ostrich Fern, Elephant Ear, and Zebra Grass. There are two water features as well as a maze. The maze is a large scale puzzle composed of 200 yews covering 1,000 square feet.

Illustration 2.2 shows the Lena Meijer Children's Garden at Frederik Meijer Gardens and Sculpture Park in Michigan. This garden has a unique assortment of

child-friendly sculptures, gorgeous and clever plantings, engrossing interactive activities and a real wetland running through the middle.



Illustration 2.2: Lena Meijer Children's Garden at Frederik Meijer Gardens and Sculpture Park, Michigan. Source: meijergardens.org



Illustration 2.3: Gaia the Turtle at Ithaca Children's Garden, New York. Source: cctompkins.org/ithacachildrengarden

Illustration 2.3 and Illustration 2.4 show the Children's Garden in Ithaca, New York. This garden includes a strawbale troll house, Gaia the turtle and wetland habitat garden, an edible garden, a meadow, a labyrinth, a bird habitat garden and a story tree.



Illustration 2.4: Labyrinth at Ithaca Children's Garden, New York.
Source: cetompkins.org/ithacachildrengarden

Cheskey (2001) adds that children should have opportunities for foraging, collecting things, and imaginative play. They need tools, open space, challenge, and opportunities to control and manipulate the environment; to imprint themselves upon the landscape, endow the landscape with significance, and experience their own actions as transforming the environment (White & Stoecklin, 1998). This suggests the playground design uses landscape and vegetation as the play setting and nature as the play materials (White & Stoecklin, 1998). For example, White & Stoecklin (1998) suggest replacing manufactured structures with natural materials such as logs, stumps, and boulders. In addition, they suggest using the landscape in natural ways with berms and mounds.

Over time, research involving the relationships between children and play and their environment has defined characteristics of each that are essential to child development. Regardless of individual theories, two themes remain constant; one, that play is in itself critical in the development of the child's mind, body and person; two, that the physical and social environment surrounding the child has an equally

profound effect. Today we need to design early childhood outdoor play spaces that address children's developmental needs holistically.

Based on the literature it is clear that play, play's role in development and the physical environment are important factors of child development. This leads us further to ask what effect does selection of play elements for a playground have on the social and cognitive behaviors of pre-school aged children. For designers and owners of child care facilities it is important to know whether or not the design of the playground matches the intent and needs of the children. One way to test this is through the use of a post-occupancy evaluation. Chapter three describes the post-occupancy evaluation methodology for this study.

CHAPTER THREE:

METHOD

Chapter two illustrated that play, play's role in development, and the physical environment are important factors related to child development. Chapter three addresses the post-occupancy evaluation of a particular playground. The following describes the design, background, participants, apparatus, and procedures for this study.

DESIGN

The design of this study used post-occupancy evaluation as a diagnostic tool. A post-occupancy evaluation is a systematic evaluation of a space after it has been built and occupied, in order to tell if, and how well, it has met expectations and satisfied the users. In this study, data was collected with designer interviews, behavioral observations, and a teacher rating scale. This methodology allowed for a comparative analysis of preschool children's behavior on specific playscape elements against the architectural designer's criteria and intent.

BACKGROUND

The study was conducted at the Cornell Child Care Center which is a Cornell-based center serving faculty, staff and students. It opened in August of 2008. The center, while owned by Cornell, is run by Bright Horizons Family Solutions, a leading provider of child care and early education programs. Bright Horizons, founded in 1986, operates more than 600 employer-sponsored centers in the United States, Europe, and Canada and is chaired by its founder Linda Mason, a 1976 Cornell graduate. Today, as the leader in employer-sponsored child care with a depth of

resources unparalleled in the industry, Bright Horizons' mission is to provide the highest-quality early child care and education in the world. Informed by the research of early childhood experts, the stated approach is child- and play-centered, tailored to the needs of individual children at their own developmental level, and includes attention to social connection, physical movement, music, art, and language. The center seeks to invite family involvement, foster the building of community, and foster respect for each unique family. Goals of the center include both creating a positive and nurturing environment for children and improving the work/life navigation for Cornell students, staff, and faculty (Cornell University Human Resources, 2009).



Illustration 3.1: Cornell Child Care Center Site Plan. Source: Bright Horizons

As shown in Illustration 3.1 the center is located on Pleasant Grove Road at the northeast edge of the Cornell campus. It is situated adjacent to A-Lot, which is a complimentary parking lot with bus service available throughout campus. In addition, it is conveniently located within walking distance of graduate student housing.

PARTICIPANTS

Participants in the study were 56 children enrolled in the Cornell Child Care Center preschool program, ranging in age from three to five years old with an equal mix of males and females and 90% Caucasian. Forty-eight percent of children have parents that are faculty members at the university. Thirty percent have staff parents and twenty-two percent have graduate student parents. All participants were selected by opportunity. Upon review from the Cornell University Institutional Review Board, this study was deemed exempt from the Federal Regulation for the Protection of Human Subjects (45 CFR 46) and therefore no parental consent was required.

APPARATUS/SETTING

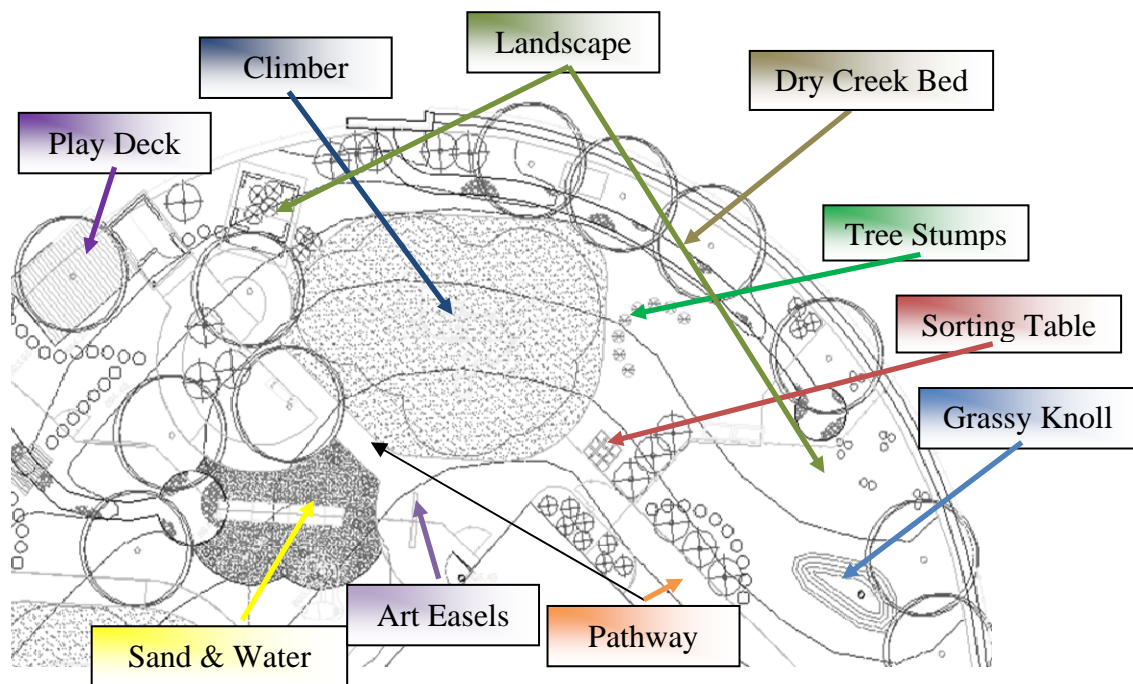


Illustration 3.2: Playground Diagram and List of Elements.
Source: Bright Horizons

While there are dedicated outdoor playgrounds for each age group, a shared outdoor courtyard and direct access to a large open natural area, the setting for this

study is limited to the preschool playground. The ten elements in the area that were observed are indicated in Illustration 3.2. The design intent and expected play behaviors for each element are addressed later in this chapter.

PLAYGROUND ELEMENTS

Illustration 3.3 shows the sorting table. The table is made of western red cedar wood with 9 tile-inlays on the surface and includes mesh pockets to hold natural materials. There are various sized shells to be used for sorting, classifying and counting.



Illustration 3.3: Sorting Table. Source: arborday.org

Illustration 3.4 and Illustration 3.5 show the tree stumps and sunshade respectively. The eight stumps are made of black locust and were obtained locally in Newfield, NY. They are approximately 10-12 inches in diameter and are buried 3 feet below ground with a 1 foot exposure above ground. They are situated in semi-circle fashion underneath a permanently installed 10 feet by 10 feet APPOLO sunshade which is mounted 8 feet above ground.

Illustration 3.6 shows the climbing structure. This structure, by KOMPAN, includes ropes, two slides, a mini climbing wall and graduated stairs. It is mounted

within 12 inches of poured-in-place rubber surfacing. It is flanked on the north side by the dry creek bed and the pathway on the south.

Illustration 3.7 shows the grassy knoll. This knoll is situated in a gated area of the playground. It is a graduated hill up to a top height of 2 feet.



Illustration 3.4: Tree Stumps



Illustration 3.5: Sunshade



Illustration 3.6: Climbing Structure. Source: kompan.com



Illustration 3.7: Grassy Knoll

Illustration 3.8 shows the dry creek bed. The bed is made of cast-in-place concrete with various sized rocks arranged throughout. The rocks are fixed and immovable. It runs from the gated section of the playground near the grassy knoll down along the north side ending up at the end of the climbing structure.

Illustration 3.9 shows the sand and water station. This station includes a sand pit that is 10 inches in depth with filter fabric lining. The water trough has 2 inch vinyl lattice filler panels in the bottom with openings and endcuts for two-sided drainage.



Illustration 3.8: Dry Creek Bed. Source: Bright Horizons

Illustration 3.10 and Illustration 3.11 show the play deck and storage shed respectively. This deck was custom built by Welliver-McGuire Contractors specifically for this center. It has bird blind windows, and a bench for seating. For observation purposes, this play element also includes the deck of the adjacent cedar storage shed.



Illustration 3.9: Sand & Water Station



Illustration 3.10: Play Deck



Illustration 3.11: Storage Shed. Source: backyardcity.com

Illustration 3.12 shows the art easels. These two easels, from Big Toys, are made from easy to clean polycarbonate and recycled plastic. The paint tray is designed to hold 8 standard disposable cups for use with water based paints. It is fixed with in ground posts in concrete and sits at each edge of the sand and water station.

Illustration 3.13 shows the pathway area. The pathway is a combination of concrete sidewalks and poured in place rubber surfacing. For observation purposes it also includes two cedar At-Ease benches. These benches are made of half a red cedar log, splinterfree and sit at a low height of 18 inches.

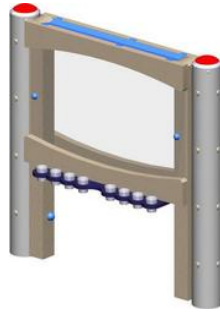


Illustration 3.12: Art Easel. Source: bigtoys.com



Illustration 3.13: Pathway

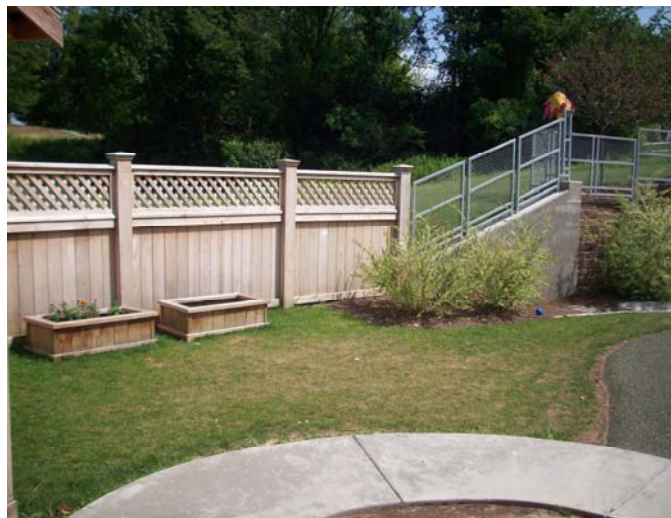


Illustration 3.14: Landscape Area

Illustration 3.14 shows the landscape area. This element encompasses all open grassy areas, with the exception of the grassy knoll itself, plantings and cedar planter

boxes. The grassy areas are spread out within the preschool play area. Plantings for this area are listed in Table 3.1. Various plants are shown in Illustration 3.15, Illustration 3.16, Illustration 3.17, Illustration 3.18, Illustration 3.19, and Illustration 3.20.

Table 3.1: Planting List for the Cornell Child Care Center.

Symbol	Botanical Name	Common Name
CV – Tree	<i>Chionanthus virginicus</i>	White Fringetree
LS – Tree	<i>Liquidambar styraciflua</i> “Gold Dust”	Sweetgum
MD – Tree	<i>Malus</i> “Donald Wyman	Donald Wyman Crabapple
PC – Tree	<i>Platanus acefolia</i> “Columbia”	London Plane Tree
PB – Tree	<i>Pyrus</i> “Bartlett”	Bartlett Pear
BG – Shrub	<i>Buxus</i> “Green Velvet”	Green Velvet Boxwood
CA – Shrub	<i>Clethra Alnifolia</i> “Hummingbird”	Summer Sweet
SI – Shrub	<i>Salix integra</i> “Hakuro Nishiki”	Japanese Dappled Willow
SD – Shrub	<i>Spirea x bumalda</i> “Dolchina	Dolchina Spirea
HS – Perennial	<i>Hemerocalus</i> “Siloam Bo Peep”	Daylily
MS – Grass	<i>Miscanthus sinensis</i> “Strictus”	Porcupine Grass
PT – Vine	<i>Parthenosisus tricuspidata</i>	Boston Ivy



Image © 2008 Arbor Day Foundation

Illustration 3.15: Sweetgum Branch. Source: arborday.org



Illustration 3.16: Bartlett Pear. Source: arborday.org



Illustration 3.17: Summer Sweet. Source: baileyplants.com



Illustration 3.18: Japanese Dappled Willow. Source: prideofplaceplants.com



Illustration 3.19: Porcupine Grass. Source: gardencrossings.com



Illustration 3.20: Daylily. Source: vrenis-secret-garden.com

PROCEDURE

In order to begin observations, approvals from the Cornell University Institutional Review Board (IRB) and the Cornell Child Care Center were obtained. The IRB required a formal proposal and application and The Cornell Child Care Center required a background check with fingerprinting. Both approvals were obtained with no issues. The IRB approval letter can be found in Appendix F.

INTERVIEWS

Interviews with the Design and Landscape Architects were held prior to the start of the observation process and teacher survey. In both interviews, project design guidelines were revealed as well as the design intent for each of the playground elements. The following is the Architectural Design Guidelines that Bright Horizons used to determine the design of the playground and therefore, which elements were ultimately chosen.

- Provide opportunities for cognitive, social and emotional development
- Create choices, promote discovery and develop confidence
- Allow for variations in physical challenges
- Develop opportunities for safe risk
- Comply with ADA, ASTM, CPSC Standards and Guidelines
- Allow for visual access
- Locate zones in appropriate areas
- Establish a clear and non-hazardous circulation pattern
- Provide shelter from the elements
- Create clear and functional boundaries
- Create space with opportunity to construct and play with loose parts
- Develop places for active and passive activities
- Provide open space
- Allow children to interact with plants and bugs
- Stimulate the senses
- Incorporate the use of nature and natural materials
- Encourage wildlife
- Provide a variety of ground surfaces

As a result of working with these guidelines, the designers chose playground elements with specific developmental goals in mind. The design intents are listed in Table 3.2.

Table 3.2: Design Intent for the Ten Playscape Elements.

Sorting Table	Solitary or Group, Exploratory Play. It was meant to foster interaction by sorting items in each square or within the pockets of the table.
Tree Stumps	Group, Dramatic Play. Encourage physical activity and active interaction.
Climber	Group, Dramatic Play. The structure could become a treehouse or a spaceship. It was also meant to encourage physical activity and coordination.
Grassy Knoll	Solitary or Parallel, Exploratory /Dramatic Play. Gives children the chance to climb, roll, laydown looking at the sky, and perhaps play “King of the Hill”.
Dry Creek Bed	Solitary/Parallel, Exploratory. It was meant as a sensory piece. It was also meant to serve as an alternate pathway to follow.
Sand & Water	Solitary/Parallel/Group, Constructive/Exploratory Play. It was meant to encourage manipulative and sensory play, building sand castles and tunnels. This element can be used with or without the water feature.
Playdeck	Group/Dramatic Play. A stage for children. It was also meant for exploration at the bird blind windows.
Art Easels	Solitary/Functional Play. The piece was meant to encourage creativity in the child.
Pathway	Solitary/Parallel, Functional Play. It was meant to encourage activities such as tricycle and scooter riding, running and chalk drawings.
Landscape	The design intent for this element is twofold. For the open spaces, Group, Functional/Dramatic Play and for the elements within the landscape itself, such as the trees and bushes Solitary/Parallel, Exploratory Play.

The Landscape Design Guidelines that were used to determine which landscape elements were ultimately chosen are as follows.

- Avoid toxicity in selected plants
- Select appropriate plants to match existing site soil conditions
- Select appropriate plants that are conducive to the existing site climate
- Consider the surrounding site deer population
- Provide varying opportunities to experience texture, sound and smell

As a result of working with these guidelines, the designers chose landscape elements with specific qualities in mind. These design intents are listed in Table 3.3.

OBSERVATIONS

Observations of three to five year olds were conducted within the Cornell Child Care Center's preschool outdoor playground at differing times of free play during the day and week. Weather permitting; observations occurred for one hour, 3-4 days per week during the months of November through February. Inclement weather was considered a heavy rain or wind chill temperatures below twenty degrees. As indicated in Illustration 3.2, ten specific elements were selected for assessment. Starting with the first element, after a ten second interval, the observer coded participant play behaviors and social interaction for that element. The observer then spent five seconds to move to the second element. After a ten second interval, the observer appropriately coded for that element. This was continued for all ten elements and then repeated throughout the hour of observation. Date, time, temperature and weather conditions were also recorded for each observation day. Observations were recorded using a customized Play Observation Scale. The scale, originally used at the University of Maryland by Kenneth Rubin, attempts to relate the two long-standing play hierarchies of Parten and Piaget. In coding types of social interaction and types of

play, the Play Observation Scale used the definitions in Table 3.4. During each ten second interval, only one level of social interaction and one play behavior was coded. However, aggression, anxious behaviors, hovering, and rough-and-tumble were coded every time they occurred within each interval in addition to other behaviors that might have occurred. All play and play behavior coding was based on visual observations. No auditory cues were used. Participant gender was not recorded.

Table 3.3: Design Intent for Elements within the Landscape.

White Fringetree	Fragrance, hiding places, winter tracery and bark, wildlife enhancement.
Sweetgum	Fall color, fruits for play props.
Donald Wyman Crabapple	Summer flowering, fall fruiting, food for birds.
London Plane Tree	Texture, large coarse leaves and fuzzy fruit balls for play props, interesting exfoliating bark.
Bartlett Pear	Fruiting, fragrant spring flowers.
Green Velvet Boxwood	Leathery evergreen leaves, hedges to separate outdoor rooms.
Summer Sweet	Fragrance, fine textured foliage, fall color, drought tolerance, attracts hummingbirds and bees.
Japanese Dappled Willow	Sound and movement, interesting variegated foliage and curly branches.
Dolchina Spirea	Cold weather hearty, fall color, interesting curly foliage, pink flowers.
Daylily	Fragrance and warm pink color, attracts hummingbirds.
Porcupine Grass	Deer resistant, screening along edges, striped green in summer and buff color in winter, rustling sounds.
Boston Ivy	Fall colors, rapid growth, climber

Table 3.4: Summary of Play and Non-Play Behaviors.

BEHAVIOR	GOAL OR INTENT
INTERACTION	
Solitary	To engage in an activity entirely alone, usually more than three feet away from other children
Parallel	To engage in activity beside, but not with other children, usually at a distance of three feet or less.
Group	To engage in an activity with another child or children, in which cognitive goal or purpose is shared amongst all group members.
PLAY BEHAVIORS	
Functional	To experience sensory stimulation through simple, repetitive muscular movements.
Constructive	To create or construct something.
Exploratory	To obtain visual or auditory information from an object.
Dramatic	To dramatize life situations or bring life to an inanimate object.
Games-with-rules	To engage in a competitive game-type activity following pre-established rules and limits
NON-PLAY BEHAVIORS	
Aggression	To express displeasure, anger, disapproval through hostile means.
Rough-and-Tumble	Playful physical activity.
Anxious Behaviors	Display of wary/fearful behaviors.
Hovering	Onlooking at a close proximity.

TEACHER SURVEY

A questionnaire rating scale was distributed to all instructors of the four preschool classrooms at the end of the study period. Based on their impression of the children's behavior, the teachers ranked play behavior and social interaction for the ten playground elements. This survey did not require the teachers to conduct systematic observations. In addition to those quantifiable responses, open ended questions and an opportunity for comments were encouraged. The questionnaire is found in Appendix B and individual responses are in Appendix D.

CHAPTER FOUR:

RESULTS

Behavioral observations and a teacher's questionnaire were the data collection tools for this post-occupancy evaluation. Results from each are stated in this chapter.

Observation results are given separately for each of the ten elements. Each table identifies the number of recorded observations for social behaviors including solitary, parallel, and group play. It also identifies the number of recorded observations for cognitive play behaviors including functional, constructive, exploratory, dramatic, and games with rules play. Additionally, it distinguishes non-play behavior which is recorded as unoccupied. Other behaviors including anxious, hovering, aggression and rough and tumble play are documented. The tables also include the total number of observations overall which was used to determine the percentage of each behavior.

Below the observation percentages on each table, the total number of occupied observations is shown as a separate line item. This number is found by subtracting the total number of unoccupied observations from the number of total observations. The number of recorded observations for each social and cognitive behavior is divided by the number of recorded occupied observations for that behavior producing a more accurate percentage of occupied observed behavior.

The sorting table element was observed as unoccupied 88.6% of the time. When occupied, observed social behaviors were: 53% solitary, 26% parallel, and 21% group play. When occupied, observed cognitive play behaviors were: 87% functional, 6% exploratory, 2% dramatic, 5% games with rules and no constructive play (see Table 4.1). Therefore, the majority of observed occupied behavior was

solitary/functional. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

The tree stump element was observed as unoccupied 86.8% of the time. When occupied, observed social behaviors were: 53% solitary, 29% parallel, and 18% group play. When occupied, observed cognitive play behaviors were: 91% functional, 8% constructive, 1% exploratory, and no dramatic play or games with rules (see Table 4.2). Therefore, the majority of observed occupied behavior was solitary/functional. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

The climber element was observed as unoccupied 17.8% of the time. When occupied, observed social behaviors were: 11% solitary, 47% parallel, and 42% group play. When occupied, observed cognitive play behaviors were: 97% functional, 2% dramatic, 1% games with rules and no constructive or exploratory play (see Table 4.3). Therefore, the observed occupied behavior was virtually equal between parallel and group, with the vast majority of the play behaviors were functional. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

The grassy knoll element was observed as unoccupied 55.7% of the time. When occupied, observed social behaviors were: 21% solitary, 35% parallel, and 44% group play. When occupied, observed cognitive play behaviors were: 91% functional, 1% exploratory, 2% dramatic, 6% games with rules and no constructive play (see Table 4.4). Therefore, the majority of observed occupied behavior was group/functional followed by parallel/functional behavior. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

Table 4.1: Sorting Table Observation Results

SORTING TABLE	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	33	16	13		54	0	4	1	3		484		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	6.0	2.9	2.4		9.9	0.0	0.7	0.2	0.5		88.6		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	62	62	62		62	62	62	62	62							
Percentage of Occupied Behavior	.53	.26	.21		.87	0.0	.06	.02	.05							

Table 4.2: Tree Stumps Observation Results

TREE STUMPS	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	38	21	13		65	6	1	0	0		474		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	7.0	3.8	2.4		11.9	1.1	0.2	0.0	0.0		86.8		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	72	72	72		72	72	72	72	72							
Percentage of Occupied Behavior	.53	.29	.18		.91	.08	.01	0.0	0.0							

Table 4.3: Climber Observation Results

CLIMBER	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	47	213	189		432	0	0	11	6		97		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	8.6	39.0	34.6		79.1	0.0	0.0	2.0	1.1		17.8		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	449	449	449		449	449	449	449	449							
Percentage of Occupied Behavior	.11	.47	.42		.97	0.0	0.0	.02	.01							

Table 4.4: Grassy Knoll Observation Results

GRASSY KNOLL	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	51	85	106		222	0	2	4	14		304		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	9.3	15.6	19.4		40.7	0.0	0.4	0.7	2.6		55.7		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	242	242	242		242	242	242	242	242							
Percentage of Occupied Behavior	.21	.35	.44		.91	0.0	.01	.02	.06							

The dry creek bed element was observed as unoccupied 88.1% of the time. When occupied, observed social behaviors were: 58% solitary, 31% parallel, and 11% group play. When occupied, observed cognitive play behaviors were: 86% functional, 2% constructive, 12% exploratory, and no dramatic play or games with rules (see Table 4.5). Therefore, the majority of observed occupied behavior was solitary/functional. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

The sand and water element was observed as unoccupied 64.1% of the time. When occupied, observed social behaviors were: 35% solitary, 25% parallel, and 40% group play. When occupied, observed cognitive play behaviors were: 62% functional, 36% constructive, 1% exploratory, 1% dramatic and no games with rules (see Table 4.6). Therefore, the majority of observed occupied behavior was group/functional. One occurrence of aggressive behavior was observed. There were no anxious, hovering or rough and tumble behaviors observed at this element. The single aggressive coded behavior for this element was a male participant throwing sand at another male participants face.

The play deck element was observed as unoccupied 70.3% of the time. When occupied, observed social behaviors were: 41% solitary, 36% parallel, and 23% group play. When occupied, observed cognitive play behaviors were: 90% functional, 1% constructive, 4% exploratory, 5% dramatic and no games with rules (see Table 4.7). Therefore, the majority of observed occupied behavior was solitary/functional. Parallel/functional behavior was close behind. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

Table 4.5: Dry Creek Bed Observation Results

DRY CREEK BED	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	38	20	7		56	1	8	0	0		481		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	7.0	3.7	1.3		10.3	0.2	1.5	0.0	0.0		88.1		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	65	65	65		65	65	65	65	65							
Percentage of Occupied Behavior	.58	.31	.11		.86	.02	.12	0.0	0.0							

Table 4.6: Sand and Water Observation Results

SAND AND WATER	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	68	50	78		122	70	2	2	0		350		0	0	1	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	12.5	9.2	14.3		22.3	12.8	0.4	0.4	0.0		64.1		0.0	0.0	0.2	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	196	196	196		196	196	196	196	196							
Percentage of Occupied Behavior	.35	.25	.40		.62	.36	.01	.01	0.0							

Table 4.7: Play Deck Observation Results

PLAY DECK	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	66	58	38		146	1	7	8	0		384		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	12.1	10.6	7.0		26.7	0.2	1.3	1.5	0.0		70.3		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	162	162	162		162	162	162	162	162							
Percentage of Occupied Behavior	.41	.36	.23		.90	.01	.04	.05	0.0							

The art easel elements were observed as unoccupied 92.3% of the time. When occupied, observed social behaviors were: 67% solitary, 14% parallel, and 19% group play. When occupied, observed cognitive play behaviors were: 98% functional, 2% constructive, and no exploratory or dramatic play nor games with rules (see Table 4.8). Therefore, the majority of observed occupied behavior was solitary/functional. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

The pathway element was observed as unoccupied 18.7% of the time. When occupied, observed social behaviors were: 2% solitary, 73% parallel, and 25% group play. When occupied, observed cognitive play behaviors were: 98% functional, 2% games with rules and no constructive, exploratory, or dramatic play (see Table 4.9). Therefore, the majority of observed occupied behavior was parallel/functional. There were no anxious, hovering, aggression or rough and tumble behaviors observed at this element.

The landscape element was observed as unoccupied 27.3% of the time. When occupied, observed social behaviors were: 5% solitary, 41% parallel, and 54% group play. When occupied, observed cognitive play behaviors were: 85% functional, 5% constructive, 5% exploratory, 3% dramatic, and 2% games with rules (see Table 4.10). Therefore, the majority of observed occupied behavior was group/functional. Parallel/functional behavior was close behind. There were four occurrences of aggression and five occurrences of rough and tumble behaviors observed. There were no anxious or hovering behaviors observed at this element. The aggressive coding for this element included three male participants fighting. The rough and tumble coding included wrestling.

Table 4.8: Art Easels Observation Results

ART EASELS	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	28	6	8		41	1	0	0	0		504		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	5.1	1.1	1.5		7.5	.02	0.0	0.0	0.0		92.3		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	42	42	42		42	42	42	42	42							
Percentage of Occupied Behavior	.67	.14	.19		.98	.02	0.0	0.0	0.0							

Table 4.9: Pathway Observation Results

PATHWAY	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	7	323	114		434	0	0	2	8		102		0	0	0	0
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	1.3	59.2	20.9		79.5	0.0	0.0	0.4	1.5		18.7		0.0	0.0	0.0	0.0
Total Recorded Occupied Behavior (Recorded – Unoccupied)	444	444	444		444	444	444	444	444							
Percentage of Occupied Behavior	.02	.73	.25		.98	0.0	0.0	0.0	.02							

Table 4.10: Landscape Observation Results

LAND-SCAPE	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games with Rules		Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
Recorded Observations	20	162	215		339	18	23	10	7		149		0	0	4	5
Total Observations	546	546	546		546	546	546	546	546		546		546	546	546	546
Percentage of Recorded Observations	3.7	29.7	39.4		62.1	3.3	4.2	1.8	1.3		27.3		0.0	0.0	0.7	0.9
Total Recorded Occupied Behavior (Recorded – Unoccupied)	397	397	397		397	397	397	397	397							
Percentage of Occupied Behavior	.05	.41	.54		.85	.05	.05	.03	.02							

Table 4.11: Teacher Survey Results

	Sorting Table	Tree Stumps	Climber	Grassy Knoll	Dry Creek Bed	Sand & Water	Play Deck	Art Easels	Pathways	Landscape
Social Behaviors										
Solitary	2.38	2.13	1.50	2.13	2.25	2.00	2.25	2.38	1.50	1.88
Parallel	2.25	2.00	2.13	2.00	2.38	2.25	2.13	1.88	1.75	2.13
Group	2.13	1.88	2.88	2.38	1.75	1.88	2.50	1.75	1.75	2.00
Cognitive Behaviors										
Functional	3.13	3.13	3.25	3.13	3.00	3.13	3.25	2.25	3.50	3.13
Constructive	3.38	3.00	3.00	3.13	3.25	3.13	3.25	2.75	3.00	2.63
Exploratory	3.38	2.75	2.88	3.38	3.75	3.63	2.88	3.00	3.00	3.13
Dramatic	2.25	2.00	2.63	3.00	3.38	2.75	4.13	2.50	2.63	3.00
Games with Rules	2.38	2.88	2.50	2.88	2.13	1.75	3.88	2.13	3.00	2.50

Table 4.11 shows the results of the Teacher’s Survey. The survey results were based on a ranking system for each of the ten playscape elements. For social behaviors, the teachers were asked to rank on a scale of 1 to 3, each element in terms of what social behaviors they felt were encouraged by the element. For this ranking system 1 was low and 3 was high. For cognitive behaviors, the teachers were asked to rank on a scale of 1 to 5, each element in terms of what cognitive behaviors they felt were encouraged by the element. For this ranking system 1 was low and 5 was high.

The responses were totaled and averaged. A detailed analysis of the results can be found in chapter five.

CHAPTER FIVE:

DISCUSSION AND CONCLUSION

DISCUSSION

The purpose of this study was to evaluate the performance of the preschool outdoor playspaces at the new Cornell Child Care Center. To achieve the research objective, a post-occupancy evaluation, consisting of designer interviews, behavioral observations and a teacher's survey was conducted. This methodology allowed for a comparative analysis of preschool children's behavior on specific playscape elements in relation to the designer's criteria and intent. This chapter will include discussion of findings from the observations and teacher survey, recommendations to enhance the current design, study limitations, and conclusion.

OBSERVATIONS AND DESIGN INTENT COMPARISON

Overall, the results from observations indicate that children's play behavior on the playground elements did not match the design intent. Many of the elements were designed to bring out play behaviors such as constructive, exploratory, dramatic play and games with rules. However, the vast majority of observed play behavior was functional.

Table 5.1 shows a comparison summary of the designer's intent, observation results, and teacher survey results. The following pages discuss how each specific element compared to the design intent. Please note that this part of the discussion only addresses occupied observations. Unoccupied observations for elements will be discussed later in the chapter.

Table 5.1: Comparison Summary of Occupied Behaviors

Play Element	Design Intent	Observation Findings	Teacher Survey Findings
Sorting Table	Solitary or Group – Exploratory	Solitary – Functional	Solitary – Constructive or Exploratory
Tree Stumps	Group – Dramatic	Solitary – Functional	Solitary – Functional
Climber	Group – Dramatic	Parallel or Group – Functional	Group – Functional
Grassy Knoll	Solitary or Parallel – Exploratory or Dramatic	Group – Functional	Group – Exploratory
Dry Creek Bed	Solitary or Parallel – Exploratory	Solitary – Functional	Parallel – Exploratory
Sand and Water	Solitary, Parallel or Group – Constructive or Exploratory	Group – Functional	Parallel – Exploratory
Play Deck	Group – Dramatic	Solitary or Parallel – Functional	Group – Dramatic
Art Easels	Solitary – Functional	Solitary – Functional	Solitary – Exploratory
Pathway	Solitary or Parallel – Functional	Parallel – Functional	Parallel or Group – Functional
Landscape	Group – Dramatic and Solitary or Parallel – Exploratory	Group – Functional	Parallel – Functional or Exploratory

Sorting Table: The sorting table was intended for solitary or group interaction and exploratory play. Observations indicated that the majority of the play was functional with solitary interaction. While a number of play behaviors were

exploratory, the majority of play behavior was functional. The primary activities at the sorting table were leaning on the table, lying underneath and on top of the table, climbing up on the table, putting objects and snow in pockets, and using hula hoops on the table. The exploratory play behaviors observed were exploring, moving, and touching shells. There were also a few instances of a shell game which falls under games with rules.

The center opened in August and by mid-November the table had been moved underneath the tree stump sunshade. The teachers are uncertain why; perhaps after the first heavy rain it was moved. Unfortunately it is too heavy for the teachers to pick up and put back at their leisure. In the beginning of the observation period teacher bags and clipboards were lying on the table and may have been a deterrent to the children to approach the table. The cracking and breaking of the table tiles may have been another deterrent for the children. The broken tiles had to be removed because of their sharpness. This may have caused the table to be viewed as “broken” and perhaps not as enticing for exploratory play.

Tree Stumps: The tree stumps were intended for groups involved in dramatic play. Observations showed primarily solitary interaction and functional play. There were a limited number of group interactions and no dramatic play. The functional play behaviors most often at the tree stumps were walking on the stumps (either one way or back and forth), jumping from stump to stump, counting while walking the stumps, sitting and resting on the stumps, crawling on the stumps, bouncing from one stump to the next, and swinging on the tent pole. There were some constructive behaviors observed such as building piles of leaves on the stumps.

The main influence most likely affecting this result was the limited access to the stumps. Since the position of the table is very close to the stumps, it makes the area crowded and difficult to accommodate groups of children.

Climber: The design intent for the climber was dramatic play and group interaction. Observations pointed to parallel or group interaction and functional play. The main functional play behaviors at the climber were sliding, putting snow on the slide with shovels, rolling or kicking snow down the slides, and climbing and hiding underneath the climber. When the slides are wet and the children are wearing snowsuits, they actually get “air” at the bottom of the slide and shoot out before they land. Games with rules included “Come and Get Me,” “Ship,” “Who’s Watching Baby,” and “Race Sliding.” The only dramatic play outcome was a young boy loudly serenading the group with the song “American Pie.”

The climber is multi-faceted with a separate slide, a mini rock climbing area, and a ropes section. The children use this equipment functionally the majority of the time. When the first of the inclement weather came, the children would only use the ropes section because the slides were wet, but once they had the appropriate outerwear there was no stopping them from the rest of the equipment. The dramatic play and group interaction intent for this element could differ from the observed outcomes because the climber is such a large structure that the children couldn’t connect with each other physically. They were busy using the structure itself and may have spent time in their favorite sections.

Grassy Knoll: The grassy knoll was widely intended for solitary or parallel interaction and exploratory or dramatic play. Observations demonstrated functional play with group interaction. Observations of solitary and parallel interaction did occur and were within 20 percent of group interaction. While there were occurrences of games with rules, there was minimal exploratory or dramatic play observed. The key play behaviors at the grassy knoll were rolling down the knoll, jumping off the knoll into leaves, sliding down the knoll while lying backwards in snow, sledding with thin plastic sleds, and rolling balls down the knoll. The few dramatic play episodes

included being animals such as lion girl, doggie, jumping frog, and bunny. Games with rules chiefly consisted of “Red Rover.”

Many times the grassy knoll was out of bounds for the children because it is a gated area. The gates are closed when there is only one classroom out on the playground in order for the teachers to maintain visual contact with the children at all times. The gates were also closed often in the early fall because of punch list¹ items that the contractor needed to take care of in that area of the building exterior. When the gates were open, the children likely viewed this as a special time, so group interaction was more apt to occur. In addition, the knoll is a relatively small grass covered hill with not much to explore, so functional play proved to be the dominant observation.

Dry Creek Bed: The design intent for the dry creek bed was solitary or parallel interaction and exploratory play. Observations indicated that the majority of play was functional with solitary interaction. The principal activities at the dry creek bed were walking on the stones (either stationary or down the bed), balancing on the stones, standing in the bed, sitting in the bed playing with props, removing snow from stones, crawling around in the bed, and driving tricycles and scooters in and out of the bed. The most interesting event in the dry creek bed was when the children found a caterpillar. On this one occasion, the discussion was overheard. The children and their teacher were debating whether the caterpillar was hibernating or dead.

The amount of solitary interaction was approximately double that of parallel interaction on this element. There were few instances of actual exploratory play; instead, the vast majority of play was functional. Within the duration of the study period there was no water flowing down the creek bed so the most available items to explore were the rocks themselves. However, the rocks were permanently adhered to

¹ Punchlist: a list of items at the end of a construction phase that the contractor is required to correct in order to complete their contract.

the creek bed, so children were unable to pick them up and examine them. Part of the design intent was for this element to be used as an alternate pathway. However, this occurrence was never observed.

Sand and Water Station: Broadly, the design intent for the sand and water station included constructive or exploratory play with either solitary, parallel, or group interaction. Observations revealed that functional play with group interaction was the most prevalent. Actions at the sand and water station included shoveling the sand, putting sand in pails, putting snow in pails, mixing snow with sand, moving sand around in the trough, and playing in the sand with loose parts. Other actions included stomping/jumping/wading in puddles, running in and out of puddles, and driving a tricycle in the puddles.

Functional play was observed twice as often as constructive play while there were only two instances of exploratory and dramatic play. Like the dry creek bed, this was another element where no water was used during the study period. Therefore the sand was used as a single element. Additionally, the space is very small and there is not much room for group interaction.

Playdeck: The playdeck was designed for group dramatic play. It was intended to act as a stage for the children. Contradicting observations indicated solitary or parallel interaction with functional play. The primary events observed at the playdeck were children lying down sucking their thumbs, lying on their backs, using shovels on a deck, making snow angels on a deck, sitting on a bench, eating snow and icicles on a bench, lying over and under a bench, hiding under a bench, resting on a bench and lightly kicking a tree, and pulling branches perhaps to test the strength of the tree.

With the majority of interactions observed being solitary, the play deck could be seen as a place of refuge or rest. Children would sit or lie on the bench or deck for a moment, as though reenergizing. There was an extremely low amount of dramatic and

exploratory play observed on this element. The location of the play deck could have played a factor in the difference between the design intent and the actual behavior. It was situated on one end of the playground, away from the middle of the playscape. During observations the teacher's primary focus was towards the middle of the playground near the climber and pathway elements. Children may have been more comfortable in the areas with the teachers.

Art Easels: The design intent for the art easels was solitary interaction with functional play. Observations for this element indicated a complete match. The foremost activities at the art easels were cleaning off dampness with a towel, wiping and rubbing snow on the easel, putting sand on the easel and wiping it off, throwing snow on the easel and wiping it off, climbing on snow underneath the easel, climbing up on top of easel because the snow is high enough underneath, and trying to climb to the top of the easel.

Pathway: The design intent for the pathway was solitary or parallel interaction and functional play. Providing a close match, parallel interaction and functional play behaviors were observed. The main actions on the pathway were sack jumping, huddling to see a hurt child, tricycle and scooter riding, running, shoveling the path, and wagon rides from the teacher. A few games with rules included bikes as school buses, "Follow the Leader," "Down by the River," and "Airplane."

Riding the tricycles and scooters seems to be the favorite activity on this element. However, since the pathway is rather narrow, the children ride the equipment both on the pathway and on the soft climber landing area. This often conflicts with the children coming off the climber slides.

Landscape: The design intent for the open spaces was group interaction and functional or dramatic play. For the elements within the landscape itself, such as the trees and bushes, solitary or parallel interaction and exploratory play was intended.

Therefore, the two-fold design intent for the landscape depended on exactly which element of the landscape was being observed. As a general result, observations illustrated group interaction with functional play. Activities at the landscape were brushing with branches on the sidewalk, playing ball in the grass, running, screaming, throwing leaves, playing catch, walking through the bushes, tossing a ball, climbing into planters, shoveling snow, eating snow, playing at the drain at the end of creek bed, digging in dirt and mulch by the trees, lying on a log bench, kicking a ball, wrestling in the grass, jumping in puddles, crawling around in the snow, pushing a “ginormous” snowball around whole area, and hugging the snow. Some examples of constructive behaviors observed were drawing with sticks in the snow, building a snowman and a castle, making snowballs, and making angels in the snow. A few exploratory behaviors included looking at bushes and trees, touching the retaining wall, touching trees that were bare except for some buds, lying with face in the snow while looking and tasting, and finding footprints of deer. Some games with rules included “Duck, Duck, Goose” and “Hamsters.” Dramatic behaviors were also observed such as fighting the shark (which was a snowpile) and pretending planters were toy boxes.

This is also the one element where some instances of aggression and rough and tumble play behaviors were observed. At first three boys were play fighting, which would fall under rough and tumble. The play turned into real pushing, punching and kicking. Teacher intervention was necessary. On a different observation day, the same children went through the same scenario fighting in the planters. They ended up piling on top of each other in the grass and again teacher intervention was needed. The third teacher intervention resulted from children hitting trees with their shovels. The teacher indicated that people should not hurt living things.

Unoccupied Behavior: This study also recorded unoccupied behavior for each of the ten elements. This meant that at the 10-second interval, there was no activity at that element. The results were as follows: sorting table 88.6%, tree stump 86.8%, climber 17.8%, grassy knoll 55.7%, dry creek bed 88.1%, sand and water 64.1%, play deck 70.3%, art easels 92.3%, pathway 18.7% and landscape 27.3%. Clearly the pathway, climber and landscape were the top used elements. The least used were the art easels, sorting table, dry creek bed and tree stumps. The following section will assess why these elements had low usage.

Art Easels: This was the least use element of the ten. The main influence for non-behavior in this situation may have been the unavailability of paint available for the children. In addition, this area is right at the edge of the sand and water element which makes the area very small and crowded at times.

Sorting Table: This element may have been exciting when the children first came to the new center. However, they could easily have become bored with it. There were only shells to sort which was not multisensory. There are many loose parts that could have been added to this element. As mentioned previously, the table had been moved underneath the tree stump sunshade and the tile top started breaking which could have deterred the children from playing with it.

Dry Creek Bed: This was originally meant as a sensory piece or as an alternative pathway to follow. As mentioned earlier, the rocks within the bed were adhered which limited the children's ability to pick them up and explore and/or construct.

Tree Stumps: The stumps were designed for physical activity and active interaction. There was a convenient sunshade over the area as well. However, once the sorting table was moved underneath the sunshade, access to the stumps was difficult

for the children. It may have seemed like a hindrance to play on them having to avoid the table.

On the whole, during the observation period, it should be noted that limited teacher involvement was seen on these four elements compared to the others.

TEACHER SURVEY AND DESIGN INTENT COMPARISON

The previous section described the similarities and differences between the designer's intent and the play behavior observed during the study period. This section describes the similarities and differences between the designer's intent and the teacher survey results. As mentioned in chapter four, this survey required the teachers to rank cognitive play behaviors and social interaction for each of the ten playground elements. For social behaviors, the teachers were asked to rank on a scale of 1 to 3, each element in terms of what social behaviors they felt were encouraged by the element. For this ranking system 1 was low and 3 was high. For cognitive behaviors, the teachers were asked to rank on a scale of 1 to 5, each element in terms of what cognitive behaviors they felt were encouraged by the element. For this ranking system 1 was low and 5 was high. The results were totaled and averaged. It is important to mention that these results arose from the teachers' impressions of what behavior or interaction was encouraged, not from systematic observations. The surveys were given to the eight teachers at the end of the four month study period. The following pages discuss how each specific element compares to the design intent.

Sorting Table: The sorting table was intended for solitary or group interaction and exploratory play. The teachers thought this element encouraged primarily solitary interaction and constructive or exploratory play, which was a very close match.

Tree Stumps: The tree stumps were intended for groups involved in dramatic play. The teachers thought this element encouraged solitary interaction and functional

play. Again this difference could be due to the location of the sorting table underneath the tree stump sunshade.

Climber: The design intent for the climber was dramatic play and group interaction and the teachers thought this element encouraged functional play and group interaction. An additional deterrent to dramatic play on this element was the fact that the children weren't always able to run freely around the climber. As mentioned previously the pathway vehicles, bikes and scooters, were allowed to drive over the soft rubber surfacing. These vehicles sometimes came close to the bottom of the slides and other areas of the climber.

Grassy Knoll: The grassy knoll was widely intended for solitary or parallel interaction and exploratory or dramatic play. The teachers thought this element encouraged group interaction with exploratory play. The main focus of the teachers' choice on this element was games that they played with the children such as "Red Rover."

Dry Creek Bed: The design intent for the dry creek bed was solitary or parallel interaction and exploratory play. The teachers thought this element encouraged parallel interaction and exploratory play which is an extremely close match.

Sand and Water Station: The design intent for the sand and water station included constructive or exploratory play with either solitary, parallel or group interaction. The teachers thought this element encouraged parallel interaction and exploratory play. Since the intent was such a wide range, the survey was a match.

Playdeck: The playdeck was designed for group dramatic play. The teachers perceptions matched the intent completely. This result widely differs from the observations. This may be because the teachers had more opportunities to see dramatic play than the observer and it was more memorable to record. It may also be because

the teachers had the ability to use auditory cues and could hear the children's conversations.

Art Easels: The design intent for the art easels was solitary interaction and functional play. The teachers thought this element encouraged solitary interaction and exploratory play. In this case, the actual functional play behaviors may not have matched the original intent. For example, the teacher stated that they had not once, since the center opened, had the paints out in order to use the easels in that manner.

Pathway: The design intent for the pathway was solitary or parallel interaction and functional play. Similarly, the teachers thought this element encouraged parallel or group interaction and functional play.

Landscape: The design intent for the landscape, again two-fold, included both group dramatic play, and solitary or parallel exploratory play depending on exactly which element of the landscape was observed. The teachers thought this element encouraged parallel interaction and functional and exploratory play as well.

OBSERVATIONS AND TEACHER SURVEY COMPARISON

The previous two sections described similarities and differences between the designer's intent and the play behavior observed during the study period. It also described the similarities and differences between the designer's intent and the teachers' perceptions. The following section will compare and discuss observations and teacher ratings, separate from the designer's intent, for each element.

Sorting Table: Observations revealed solitary interaction and functional play. Similarly the teacher survey revealed solitary interaction. However, the teacher survey showed that play was constructive or exploratory.

Tree stumps: Both observations and teacher ratings were in agreement for this element. The results showed solitary interaction with functional play.

Climber: Observations pointed to parallel or group interaction with functional play. Here too, the teacher survey matched the observation results revealing group interaction with functional play.

Grassy knoll: Group interaction with functional play was indicated by observations for this element. The teacher survey resulted similarly with group interaction, however, differed in that it showed exploratory play.

Dry creek bed: Observations demonstrated solitary interaction with functional play. Teachers held a different view of parallel interaction with exploratory play.

Sand and Water: Observations pointed to group interaction with functional play. The teachers disagreed showing parallel interaction with exploratory play.

Play deck: Solitary or parallel interaction with functional play was revealed through observations for this element. On the other hand, group interaction with dramatic play was shown by the teacher survey. One explanation for the difference in cognitive behavior results in this situation could be the lack of auditory cues for the observer. The teachers, however, could hear what the children were discussing. Therefore if the observer had auditory cues, perhaps more behaviors could have been recorded as dramatic.

Art easels: Observations showed solitary interaction with functional play. Similarly the teacher survey indicated solitary interaction, but differed showing exploratory play.

Pathway: Both observations and the teacher survey agreed for this element. They both identified parallel interaction with functional play.

Landscape: Again, both observations and the teacher survey agreed. They found parallel or group interaction with functional play.

In total, there were four matches between the observations and teachers' ratings of the play elements; the tree stumps, the climber, the pathway, and the landscape.

RECOMMENDATIONS

There are three recommendations that could enhance this playscape and encourage the original design intent. Based on the literature review, the recommendations are to widen and delineate the pathway, enhance the landscape, and relocate and enhance the play deck. These changes could bring out more exploratory and dramatic play that was missing from the observation and survey results.

Recommendation to Widen and Delineate the Pathway: Children understand their space and have better mastery of it when circulation patterns are clear. Circulation routes and paths clear of dangerous areas create a safer environment (Greenman, 1988). The widening of the pathway may keep the play vehicles on the hard surface areas that were meant for bicycles and scooters. It would alleviate the need for the vehicles to drive onto the soft rubber surface surrounding the climber element and make that area safer. The layout of pathways and the landscaping of the playground should be distinct. Additionally, the play area should divide moving equipment from stationary equipment (Kennedy, 2008). One way to do this is to provide a barrier between the pathway and the climber. For example, at the New York Hall of Science, a wavy line formed by a seat wall and a water trough form the juncture between two parts of the playground. As shown in Illustration 5.1, the seat wall serves as a vantage point from which parents (in this case, teachers) can watch children on both sides of the playground (Clemens, 2008).



Illustration 5.1: New York Hall of Science. Source: bkskarch.com

Recommendation to Enhance the Landscape: Enhancing the landscape plays an important role in encouraging exploratory play. Elements for design of a natural playground can include large and small pieces of driftwood, tree rounds, stumps and branches, smooth rocks and boulders, moveable pieces of marble and stepping stones, bales of hay, varying lengths of vinyl gutter, measuring tapes, rain gauges, and thermometers (Curtis & Carter, 2003). In addition, materials such as logs secured crosswise on each other in orderly layers can be formed to make an open pyramid. Knotted ropes hanging from tree limbs or other supporting structures can be used to make a swing. Sections of utility poles or logs secured vertically in the ground with large dowels inserted every six to ten feet for handgrips and footholds can be used for climbing. Other elements that can be used to enhance the landscape include a polyethylene slide built into a grassy mound of earth, a maze created by shrub plantings, zigzag lines painted on the ground, climbing trees, a natural trail and picnic site, a watering hose, seeds, bird feeder and bath, magnifying glasses, and nets (Maxwell, 1998). Finally, landscape with textures, colors and scents is important.

Surrounding a playground with features such as hills, trees, edible plants and shrubs enhance the playscape. Fragrant herbs such as mint, lavender, rosemary, and creeping thyme can be planted around the grounds, and periodically, bouquets can be brought inside for meal tables, bathrooms, and sensory investigation (Curtis & Carter, 2003). Curtis and Carter (2003) also recommend planting berry bushes or a grape arbor in order to offer children a chance to see and pick their own produce.

Plants can be designed into many different types of play settings, but they should also be considered as play settings in and of themselves (Moore, 1993). Moore (1993) explains that because of their interactive properties, plants provide intrinsically interesting, open-ended settings that stimulate exploration and discovery, dramatic play, and imaginations. They stimulate all of the senses.

Recommendation to relocate and Enhance the Play Deck: The third recommendation is to relocate and enhance the play deck. A good playground must have playhouses that children can change, adapt, reconfigure, impose their own meaning on, and use to expand their imagination. These structures encourage rich sociodramatic play (Johnson et al. 2005). The play deck should be moved to a central setting within the playground providing better access for the children. Enhancement to the play deck could include a more stage-like appearance and the addition of flexible parts. A curtain constructed of weather resistant material could be added to the play deck. It would need to be adjustable to cover all or part(s) of the deck depending on what the children wanted to do. Maxwell (1998) suggests the following loose parts for outdoor dramatic play: puppets, strong corrugated cardboard appliance boxes, dress up clothes, containers (pots, pans, cups, muffin tins, bowls), and old steering wheels. Currently none of these parts exist on the playground. In the fall season, loose parts consisted of pails for the sand and balls. In the winter time loose parts were shovels

and sleds. If loose parts were dedicated to the play deck there would most likely be an increase in dramatic play.

LIMITATIONS

This post-occupancy evaluation documented how each of the ten elements were used by the participants. The parameters of the evaluation were set up to provide conclusive information. However, circumstances of the chosen methodology for this study make two limitations noteworthy. Since observations were performed in the northeast during the fall and winter season only, the results cannot be applied to other seasons. Frequent inclement weather may have affected the behavior of the children. In order to compare the designer's intent for the spring and summer seasons, future observations would need to take place.

Secondly, the total number of observations during this study period did not meet the goal. The total expected observations for each element was approximately 1000 and the actual total observations was 546. Increased observations could produce higher confidence in the outcomes. Due to the university holiday schedule the center was closed two days at Thanksgiving and ten days at Christmas. The center's policy on outdoor play is that they go out everyday unless the wind chill is 20 degrees or less. This year, there were many days in January that observations could not be completed due to the outdoor temperature. Additionally, since this study is focused on the preschool playground area itself, no observations were recorded when the children were in the courtyard area or sledding areas.

CONCLUSION

Overall, the results from observations indicate that children's play behavior on the playground elements did not match the design intent. Many of the elements were

designed to bring out play behaviors such as constructive, exploratory, dramatic play and games with rules. However, the vast majority of observed play behavior was functional. There was better agreement for social interaction when comparing design intent and observed behavior. Teacher ratings of play behavior on the playground elements were on the whole closer to the design intent. Since the teacher ratings were based only on the teachers' impression of the children's behaviors, there could be several reasons why those results were more similar to the design intent. First, the teachers know the participants better than the observer because they are with them every day. Over time they become more familiar with the participants and can understand their actions more clearly. Secondly, the teachers were able to have auditory cues. They were able to hear the conversations that the participants were having while they were playing on these elements which gave more insight to the whole picture. In addition, because the teachers are trained in child development, they are familiar with what design intent is about. They are aware of social and cognitive development and the importance of the physical environment in these play behaviors. Moreover, the teachers take an active role in the children's play. Conversely, the teachers could be biased. It is possible that the teachers see the behaviors they want to see. All these factors could lead the teachers to answer in favor of the intent.

The complex relationships between the designer's intent, observations, and teacher ratings, reveal that the physical environment matters. The designers performed research and went through a programming process with the client to developing their design intent. Yet the majority of observations did not coincide with that intent. Numerous reasons for the discrepancy have been discussed previously in this paper. This study shows that the physical environment is challenging to design. However, analyzing the results can help both the client and designer to make changes to the current site and provide insight to future designs. We know that the way the physical

environment is designed, used and studied all have a profound effect on children's development. It is important to continually learn how the physical environment can successfully impact children's development.

APPENDIX A:

PLAY OBSERVATION SCALE CODING RECORD

DATE:
CHILDREN:
TIME:
WEATHER:

SORTING TABLE	TREE STUMPS	CLIMBER STRUCTURE	GRASSY KNOLL	DRY CREEK BED	SAND & WATER	PLAY DECK	ART EASELS	PATHWAY	LANDSCAPE
------------------	----------------	----------------------	-----------------	------------------	-----------------	-----------	------------	---------	-----------

SOCIAL BEHAVIORS									
SOLITARY PLAY									
PARALLEL PLAY									
GROUP PLAY									
COGNITIVE BEHAVIORS									
FUNCTIONAL PLAY									
CONSTRUCTIVE PLAY									
EXPLORATORY PLAY									
DRAMATIC PLAY									
GAMES WITH RULES									
OTHER BEHAVIORS									
ANXIOUS BEHAVIORS									
HOVERING									
AGGRESSION									
ROUGH & TUMBLE									
NO BEHAVIOR									
UNOCCUPIED ELEMENT									

APPENDIX B:

CORNELL CHILD CARE CENTER - TEACHER QUESTIONNAIRE

PLAYGROUND ELEMENTS

SORTING TABLE	TREE STUMPS	CLIMBER STRUCTURE	GRASSY KNOLL	DRY CREEK BED	SAND & WATER	PLAY DECK	ART EASELS	PATHWAY	LANDSCAPE
---------------	-------------	----------------------	--------------	---------------	--------------	-----------	------------	---------	-----------

SOCIAL BEHAVIORS: *Please rank on a scale of 1-3, each element in terms of what social behaviors each one encourages:*

	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank
SOLITARY PLAY									
PARALLEL PLAY									
GROUP PLAY									

COGNITIVE BEHAVIORS: *Please rank on a scale of 1-5, each element in terms of what cognitive behaviors each one encourages:*

	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank
FUNCTIONAL PLAY									
CONSTRUCTIVE PLAY									
EXPLORATORY PLAY									
DRAMATIC PLAY									
GAMES WITH RULES									

OTHER BEHAVIORS: *Please check any behaviors that you observed for each playground element.*

ANXIOUS BEHAVIORS									
HOVERING									
AGGRESSION									
ROUGH & TUMBLE									

NO BEHAVIOR PRESENT: *Please check any playground element in which you observed as being unoccupied more than half of the time.*

UNOCCUPIED ELEMENT									
--------------------	--	--	--	--	--	--	--	--	--

QUESTION 1: DO YOU EVER RESTRICT PORTIONS OF THE PLAYGROUND? IF SO, WHY?

QUESTION 2: WHAT IS YOUR PHILOSOPHY ON OUTDOOR PLAY?

QUESTION 3: WHAT ACTIVITIES ARE IMPORTANT FOR THIS AGE GROUP?

OTHER COMMENTS:

APPENDIX C: **PLAY OBSERVATION SCALE CODING RECORD**

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	S	P	G	F	C	E	D	G	U	A	H	G	R	
1									1					11/5 - 60 degrees, balmy partly sunny 10am, 20 children
2									1					
3									1					
4									1					
5									1					
6									1					
7	1			1										
8									1					
9	1			1										
10									1					
11									1					
12									1					
13									1					
14									1					
15									1					
16	1					1								11/6 - 55 degrees, foggy 11am, 16 children
17									1					
18									1					
19									1					
20									1					
21									1					
22									1					
23									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
24									1					
25									1					
26									1					
27									1					
28									1					
29									1					
30									1					
31									1					
32									1					
33									1					
34									1					
35									1					
36									1					11/7 - 55 degrees 10am - 17 children
37									1					
38									1					
39									1					
40									1					
41									1					
42									1					
43	1			1										
44	1			1										
45	1			1										
46									1					
47									1					
48	1			1										
49		1		1										
50	1			1										
51									1					
52									1					
53									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
54									1					11/10 - 45 degrees, mild 10am - 18 children
55									1					
56									1					
57									1					
58									1					
59			1	1										sorting table is under the tent
60			1	1										
61		1		1										
62									1					
63									1					
64		1		1										11/11 - 45 degrees, dry, little windy 4pm
65									1					
66									1					
67									1					
68									1					
69									1					
70									1					
71									1					
72									1					
73									1					
74									1					11/11 - 45 degrees, dry, little windy 4pm
75									1					
76									1					
77									1					
78									1					sorting table is under the tent

Sorting Table																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G								
79										1							teacher bags and clipboard on table
80										1							
81										1							
82	1					1											looking in teacher bag
83										1							
84										1							
85										1							11/12 - 45degrees, mild
86										1							10am, 17 children
87		1			1												
88		1			1												leaning/lying on table
89			1		1												
90			1		1												
91										1							
92										1							
93										1							
94										1							
95										1							
96										1							
97										1							
98										1							
99	1				1												exploring shells
100	1				1												
101										1							
102										1							
103										1							11/13 - 45 degrees
104										1							11am, 19 children
105										1							

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
106									1					
107									1					
108									1					
109									1					
110									1					
111									1					
112									1					
113									1					
114									1					
115									1					
116									1					
117									1					
118									1					
119									1					11/14 - 50 degrees, mild
120									1					11am, 20 children
121									1					
122									1					just back in from fire drill
123									1					
124									1					
125	1					1								
126									1					
127									1					
128		1				1								exploring shells
129	1			1										quick sort
130									1					
131									1					
132									1					
133			1				1							climbing on table
134									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
135			1					1						11/24 - 40 degrees some snow on ground
136			1					1						
137			1					1						11am, 16 children
138									1					
139									1					shell game
140									1					
141									1					
142									1					
143									1					
144									1					
145									1					
146									1					
147									1					
148									1					
149									1					
150									1					
151									1					
152									1					
153									1					
154									1					
155									1					11/25 - 40 degrees
156									1					snow on ground
157									1					11am, 14 children
158									1					
159									1					
160									1					
161									1					
162									1					
163	1			1										laying on table

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
164		1		1										
165		1		1										
166									1					
167									1					
168									1					
169									1					
170									1					
171									1					11/26 - 40 degrees damp, snow on ground 10am, 13 children
172	1			1										
173		1		1										objects and snow in pockets
174									1					
175									1					
176									1					
177									1					
178									1					
179									1					
180									1					
181									1					
182									1					
183									1					
184									1					
185									1					
186									1					
187	1			1										
188									1					
189									1					12/1 - 38 degrees, windy, no snow

Sorting Table																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
190											1						11am , 18 children
191											1						
192											1						
193											1						
194											1						
195											1						
196											1						
197											1						
198											1						
199											1						
200		1			1												
201											1						
202	1				1											lying on table	
203											1						
204											1						
205											1						
206											1						
207											1						
208											1					12/3 - 40-45 degrees, dry and mild 11am, 21 children	
209											1						
210											1						
211											1						
212											1						
213											1						
214											1						
215											1						
216											1						
217											1						
218											1						

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
219									1					
220									1					
221									1					
222									1					
223									1					
224									1					
225									1					
226									1					
227									1					
228									1					12/4 - 35 - 40 degrees, breezy, cloudy
229									1					11am, 22 children
230									1					
231									1					
232									1					
233									1					
234									1					
235									1					
236									1					
237			1	1										using hula hoops on table
238	1			1										lying under table
239			1	1										sorting shells
240			1	1										
241			1	1										
242			1	1										
243	1			1										
244									1					12/9 - 35 - 40 degrees

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
245									1					Some wet snow
246									1					11am, 8 children
247									1					other classroom on field trip
248									1					
249									1					
250									1					
251									1					
252									1					
253									1					
254									1					
255									1					
256									1					
257									1					
258									1					
259									1					
260									1					
261									1					
262									1					
263									1					
264									1					
265									1					
266									1					12/15 - 38 degrees
267									1					previous snowfall, melting, slushy spots
268									1					11am, 10 children
269									1					
270									1					
271									1					
272									1					
273									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	S	P	G	F	C	E	D	G						
274									1					
275									1					
276									1					
277									1					
278									1					12/16 - 30 degrees, cold 11am, 10 children
279									1					
280									1					
281									1					
282									1					
283									1					
284									1					
285									1					
286									1					
287									1					
288									1					
289									1					
290									1					
291									1					
292									1					
293									1					
294									1					
295									1					
296									1					
297									1					
298									1					12/17 - 35 degrees, mild 11am, 20 children
299									1					
300									1					
301									1					

Sorting Table																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
302											1						
303											1						
304											1						
305											1						
306											1						
307											1						
308											1						
309											1						
310											1						
311											1						
312											1						
313											1						
314											1						
315											1						
316											1						
317											1						
318											1						
319											1						
320											1						
321											1					1/5 - 38 degrees, partly cloudy	
322											1						11am, 19 children
323											1						
324											1						
325											1						
326											1						
327											1						
328											1						
329											1						
330											1						
331	1				1												

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
332									1					
333									1					
334									1					
335									1					
336									1					
337									1					
338									1					
339									1					
340									1					
341									1					
342									1					
343									1					
344									1					
345									1					1/6 - 30 degrees, sunny, no wind
346									1					11am, 17 children
347									1					
348									1					
349									1					
350									1					
351									1					
352									1					
353									1					
354									1					
355									1					
356									1					
357									1					
358									1					
359									1					
360									1					
361									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
362									1					
363									1					
364									1					
365									1					
366									1					
367									1					
368									1					
369									1					1/30 - 30 degrees a lot of snow with very few clear patches 11am, 12 children
370									1					
371									1					
372									1					
373		1		1										
374		1		1										
375									1					
376									1					
377									1					
378									1					
379									1					2/2 - 25 degrees snow on site
380									1					
381									1					
382									1					
383									1					
384									1					
385									1					
386									1					
387									1					
388									1					
389									1					2/2 - 25 degrees snow on site
390									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
391									1					11am, 20 children
392									1					
393									1					
394									1					
395									1					
396									1					
397									1					
398									1					
399									1					
400									1					
401									1					
402									1					
403									1					
404									1					
405									1					
406	1			1										climbing on table
407									1					
408									1					
409									1					
410									1					
411									1					
412									1					
413									1					2/10 - 40 degrees, cloudy
414									1					11am, 7 children
415									1					other classroom on fieldtrip
416									1					
417									1					
418									1					
419									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
420									1					
421									1					
422									1					
423									1					
424	1			1										
425									1					
426									1					
427									1					
428									1					
429	1			1										lying under table
430	1			1										touching shells
431		1		1										
432									1					
433									1					
434									1					
435									1					2/11 - 50 degrees, cloudy
436									1					10am, 20 children
437									1					
438									1					
439									1					
440									1					
441									1					
442									1					
443									1					
444									1					
445									1					
446									1					
447									1					
448									1					
449									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
450									1					
451									1					
452									1					
453	1			1										lifting up tiles
454		1		1										
455		1		1										moving shells
456									1					
457									1					
458									1					
459									1					2/16 - 30 degrees, windy
460									1					11am, 8 children
461									1					other classroom on fieldtrip
462									1					
463									1					not much snow but very icy sections
464									1					
465									1					
466									1					
467									1					
468									1					
469									1					
470									1					
471									1					
472									1					
473									1					2/18 - 30 degrees, windy, snow flurries
474									1					11am, 12 children
475									1					

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
476									1					
477	1			1										lying on table
478									1					
479									1					
480									1					
481									1					
482									1					
483									1					
484									1					
485									1					
486									1					
487									1					2/19 - 35 degrees
488									1					10am, 11 children
489									1					
490									1					
491									1					
492									1					
493									1					
494									1					
495									1					
496									1					
497									1					
498									1					
499									1					
500									1					
501									1					
502									1					
503									1					2/26 - 40 degrees, mild
504									1					11am, 21 children

Sorting Table																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
505											1						
506											1						
507											1						
508											1						
509											1						
510											1						
511											1						
512											1						
513											1						
514											1						
515											1						
516	1				1												
517		1			1												
518	1				1												
519											1						
520											1						
521											1						
522											1						
523											1						
524											1						
525											1						
526											1						
527											1						2/27 - 45 degrees
528											1						11am, 20 children
529											1						
530											1						
531											1						
532											1						
533											1						
534											1						
535											1						

Sorting Table														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
536									1					
537	1			1										
538	1			1										
539	1			1										
540									1					
541									1					
542									1					
543									1					
544	1			1										
545	1			1										
546									1					

[illegible]

Sorting Table																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G			F	C	E	D		G		U		A	H	
occupied	62	62	62		62	62	62	62	62								
breakdown	0.53	0.26	0.21		0.87	0	0.06	0.02	0.05								

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
1									1					11/5 - 60 degrees, balmy partly sunny 10am, 20 children
2									1					
3									1					
4									1					
5									1					
6	1			1										walking on stumps
7									1					
8									1					
9	1				1									
10	1					1								
11									1					
12	1			1										
13									1					
14									1					
15									1					
16									1					11/6 - 55 degrees, foggy 11am, 16 children
17									1					
18									1					
19									1					
20									1					
21			1	1										
22									1					
23			1	1										
24			1	1										jumping stump to stump
25									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Aggression				Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules		Anxious	Hovering	Aggression	Rough & Tumble	
	S	P	G	F	C	E	D	G	U	A	H	G	R	
26			1	1										walking on stumps, counting
27			1	1										
28		1		1										
29	1			1										
30									1					
31									1					
32									1					
33									1					
34									1					
35									1					
36									1					11/7 - 55 degrees
37	1			1										10am - 17 children
38	1			1										
39		1		1										
40	1			1										
41		1		1										
42	1			1										
43									1					
44									1					
45									1					
46									1					
47									1					
48									1					
49									1					
50									1					
51									1					
52	1			1										
53									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
54									1					11/10 - 45 degrees, mild 10am - 18 children
55									1					
56									1					
57									1					
58			1	1										boy walking on stumps
59			1	1										
60		1		1										
61									1					
62									1					crawling on stumps
63		1		1										sitting to lean on sorting table table under tent still
64									1					
65									1					
66									1					
67									1					walking on stumps back and forth
68									1					
69									1					
70									1					
71									1					11/11 - 45 degrees, dry, little windy 4pm 4pm, 25 children
72									1					
73	1			1										
74	1			1										
75		1		1										walking on stumps back and forth
76									1					
77									1					
78									1					
79									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Aggression				Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules		Anxious	Hovering	Aggression	Rough & Tumble	
	S	P	G	F	C	E	D	G	U	A	H	G	R	
80									1					
81									1					
82									1					
83									1					
84	1			1										swinging on pole
85									1					11/12 - 45 degrees, mild 10am, 17 children
86									1					
87									1					
88	1			1										
89	1			1										
90									1					
91		1		1										
92		1		1										
93		1		1										
94									1					
95									1					
96									1					
97									1					
98									1					
99									1					
100									1					
101		1		1										
102									1					
103									1					11/13 - 45 degrees 11am, 19 children
104									1					
105									1					
106									1					
107									1					
108									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
109	1			1										
110		1		1										
111	1			1										
112									1					
113									1					
114									1					
115									1					
116									1					
117									1					
118									1					
119									1					11/14 - 50 degrees, mild
120									1					11am, 20 children
121									1					
122									1					just back in from fire drill
123									1					
124									1					
125									1					
126									1					
127	1			1										sitting, resting
128									1					
129	1			1										walking on stumps
130									1					swinging on pole
131									1					
132									1					
133		1		1										crawling on stumps
134			1	1										siting to lean on table
135									1					11/24 - 40 degrees

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
136									1					some snow on ground
137									1					11am, 16 children
138									1					
139									1					
140									1					
141									1					
142									1					
143									1					
144									1					
145									1					
146									1					
147	1			1										
148	1			1										
149									1					
150									1					
151									1					
152									1					
153									1					
154									1					
155									1					11/25 - 40 degrees
156									1					snow on ground
157									1					11am, 14 children
158									1					
159									1					
160									1					
161									1					
162									1					
163									1					
164									1					
165									1					
166									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
167									1					
168									1					
169									1					
170									1					
171									1					11/26 - 40 degrees damp, snow on ground 10am, 13 children
172									1					
173									1					
174	1			1										
175									1					
176									1					
177									1					
178									1					
179									1					
180									1					
181									1					
182									1					
183	1			1										
184									1					
185	1			1										
186									1					
187									1					
188									1					
189		1		1										12/1 - 38 degrees, windy, no snow 11am , 18 children
190			1	1										
191									1					
192									1					
193									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied					Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules		Anxious	Hovering	Aggression	Rough & Tumble	
	S	P	G	F	C	E	D	G	U	A	H	G	R	
194									1					putting leaves on stumps
195									1					
196									1					
197									1					making pink
198									1					
199									1					
200									1					
201									1					
202									1					
203									1					
204									1					
205									1					
206									1					
207									1					
208									1					12/3 - 40-45 degrees, dry and mild
209									1					11am, 21 children
210									1					
211									1					
212									1					
213									1					
214									1					
215									1					
216									1					
217									1					
218									1					
219									1					
220	1			1										
221			1		1									walking on stumps

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
222	1				1									
223			1		1									
224			1		1									
225			1		1									
226									1					
227									1					
228									1					12/4 - 35 - 40 degrees, breezy, cloudy 11am, 22 children bouncing from one to next walking on stumps
229									1					
230									1					
231									1					
232									1					
233									1					
234									1					
235									1					
236									1					
237									1					
238		1		1										
239									1					
240									1					
241									1					
242	1			1										12/9 - 35 - 40 degrees Some wet snow 11am, 8 children
243									1					
244									1					
245									1					
246									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
247									1					other classroom on field trip
248									1					
249									1					
250									1					
251									1					
252									1					
253									1					
254									1					
255									1					
256									1					
257	1			1										
258		1		1										
259									1					
260									1					
261									1					
262									1					
263									1					
264									1					
265									1					
266									1					12/15 - 38 degrees previous snowfall, melting, slushy spots 11am, 10 children
267									1					
268									1					
269									1					
270									1					
271									1					
272									1					
273									1					
274									1					
275									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
276									1					
277									1					
278									1					12/16 - 30 degrees, cold 11am, 10 children
279									1					
280									1					
281									1					
282									1					
283									1					
284									1					
285									1					
286									1					
287									1					
288									1					
289									1					
290									1					
291									1					
292									1					
293									1					
294									1					
295									1					
296									1					
297									1					
298									1					12/17 - 35 degrees, mild 11am, 20 children
299									1					
300									1					
301									1					
302									1					
303									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied					Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules		Anxious	Hovering	Aggression	Rough & Tumble	
	S	P	G	F	C	E	D	G	U	A	H	G	R	
304									1					
305									1					
306									1					
307									1					
308									1					
309									1					
310									1					
311									1					
312									1					
313									1					
314									1					
315									1					
316									1					
317									1					
318									1					
319									1					
320									1					
321									1					1/5 - 38 degrees, partly cloudy
322									1					11am, 19 children
323									1					
324									1					
325									1					
326									1					
327	1			1										
328									1					
329									1					
330									1					
331									1					
332									1					
333									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
334	1			1										
335									1					
336									1					
337									1					
338									1					
339									1					
340									1					
341									1					
342									1					
343									1					
344									1					
345									1					1/6 - 30 degrees, sunny, no wind 11am, 17 children
346									1					
347									1					
348									1					
349									1					
350									1					
351									1					
352									1					
353									1					
354									1					
355									1					
356									1					
357									1					
358									1					
359									1					
360									1					
361									1					
362									1					
363									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Aggression				Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules		Anxious	Hovering	Aggression	Rough & Tumble	
	S	P	G	F	C	E	D	G	U	A	H	G	R	
364									1					
365									1					
366									1					
367									1					
368									1					
369									1					1/30 - 30 degrees a lot of snow with very few clear patches 11am, 12 children
370									1					
371									1					
372									1					
373		1		1										
374		1		1										
375									1					
376									1					
377									1					
378									1					
379									1					
380									1					
381									1					
382									1					
383									1					
384									1					
385									1					
386									1					
387									1					
388									1					
389									1					2/2 - 25 degrees snow on site 11am, 20 children
390									1					
391									1					
392									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
393									1					
394									1					
395									1					
396									1					
397									1					
398									1					
399									1					
400									1					
401									1					
402									1					
403									1					
404									1					
405									1					
406	1			1					1					
407									1					
408									1					
409									1					
410									1					
411									1					
412									1					
413									1					2/10 - 40 degrees, cloudy
414									1					11am, 7 children
415									1					other classroom on fieldtrip
416									1					
417									1					
418									1					
419									1					
420									1					
421									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
422									1					
423									1					
424	1			1										
425									1					
426									1					
427									1					
428									1					
429	1			1										
430	1			1										
431		1		1										
432									1					
433									1					
434									1					
435									1					2/11 - 50 degrees, cloudy
436									1					10am, 20 children
437									1					
438									1					
439									1					
440									1					
441									1					
442									1					
443									1					
444									1					
445									1					
446									1					
447									1					
448									1					
449									1					
450									1					
451									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
452									1					
453	1			1										
454		1		1										
455		1		1										
456									1					
457									1					
458									1					
459									1					2/16 - 30 degrees, windy
460									1					11am, 8 children
461									1					other classroom on fieldtrip
462									1					
463									1					not much snow but very icy sections
464									1					
465									1					
466									1					
467									1					
468									1					
469									1					
470									1					
471									1					
472									1					
473									1					2/18 - 30 degrees, windy, snow flurries
474									1					11am, 12 children
475									1					
476									1					
477									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied					Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules		Anxious	Hovering	Aggression	Rough & Tumble	
	S	P	G	F	C	E	D	G	U	A	H	G	R	
478									1					
479									1					
480									1					
481									1					
482									1					
483									1					
484									1					
485									1					
486									1					
487									1					2/19 - 35 degrees
488									1					10am, 11 children
489									1					
490									1					
491									1					
492									1					
493									1					
494									1					
495									1					
496									1					
497									1					
498									1					
499	1			1										swinging on pole
500									1					
501									1					
502									1					
503	1			1										2/26 - 40 degrees, mild
504									1					11am, 21 children
505									1					
506									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
507									1					
508									1					
509									1					
510									1					
511									1					
512									1					
513									1					
514									1					
515									1					
516	1			1										
517									1					
518									1					
519									1					
520									1					
521									1					
522									1					
523									1					
524									1					
525									1					
526									1					
527									1					2/27 - 45 degrees
528									1					11am, 20 children
529									1					
530									1					
531									1					
532									1					
533									1					
534									1					
535									1					
536		1		1										
537									1					

Tree Stump														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
538									1					
539									1					
540									1					
541									1					
542									1					
543									1					
544									1					
545									1					
546									1					

[illegible]

Tree Stump																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	72	72	72		72	72	72	72	72								
breakdown	0.53	0.29	0.18		0.9	0.08	0.01	0	0								

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
1		1		1										11/5 - 60 degrees, balmy partly sunny 10am, 20 children
2		1		1										
3		1		1										
4		1		1										
5			1	1										
6			1	1										
7			1				1							
8			1				1							
9									1					
10			1	1										
11			1	1										
12			1	1										
13			1	1										
14			1	1										
15	1			1										
16									1					11/6 - 55 degrees, foggy 11am, 16 children climber is damp
17		1		1										
18									1					
19									1					
20	1			1										
21	1			1										
22									1					
23		1		1										
24			1	1										
25			1	1										
26		1		1										
27			1	1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U		A	H	G	R
28	1			1										
29			1	1										dried off slides
30		1		1										mostly on ropes
31			1	1										
32			1	1										
33			1	1										
34			1	1										
35			1	1										
36		1		1										11/7 - 55 degrees
37		1		1										10am - 17 children
38		1		1										
39			1	1										
40			1	1										
41			1	1										
42			1	1										
43			1	1										
44		1		1										
45		1		1										
46			1	1										
47			1	1										
48		1		1										
49			1	1										
50			1	1										
51			1	1										
52			1	1										
53			1	1										
54		1		1										11/10 - 45 degrees, mild
55		1		1										10am - 18 children
56		1		1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U		A	H	G	R
57			1	1										
58			1	1										
59			1	1										
60			1	1										
61			1	1										
62		1		1										
63			1	1										
64			1	1										
65			1	1										
66		1		1										
67		1		1										
68			1	1										
69			1	1										
70		1		1										
71			1	1										
72		1		1										
73			1	1										
74		1		1										
75			1	1										
76			1	1										
77		1		1										
78			1	1										
79			1	1										
80	1			1										
81		1		1										
82			1	1										
83		1		1										
84		1		1										

11/11 - 45
degrees, dry, little
windy 4pm
4pm, 25 children

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
85		1		1										11/12 - 45degrees, mild 10am, 17 children
86	1			1										
87									1					
88									1					
89									1					
90									1					
91		1		1										
92									1					
93									1					
94		1		1										
95		1		1										
96		1		1										
97		1		1										
98		1		1										
99			1	1										11/13 - 45 degrees 11am, 19 children
100			1	1										
101			1	1										
102			1	1										
103		1		1										
104		1		1										
105		1		1										
106			1	1										
107			1	1										
108			1	1										
109			1	1										
110			1	1										
111			1	1										
112		1		1										
113		1		1										
114	1			1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
115									1					
116			1	1										
117			1	1										
118			1	1										
119		1		1										11/14 - 50 degrees, mild
120			1	1										11am, 20 children
121			1				1							
122		1		1										just back in from fire drill
123			1	1										
124			1	1										
125			1	1										
126			1	1										
127			1	1										
128			1	1										
129			1	1										
130			1	1										
131			1	1										
132			1	1										
133		1		1										
134									1					
135		1		1										11/24 - 40 degrees
136		1		1										some snow on ground
137		1		1										11am, 16 children
138		1		1										
139									1					
140									1					
141									1					

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
142									1					
143									1					
144									1					
145		1		1										
146		1		1										
147		1		1										
148		1		1										
149	1			1										
150		1		1										
151		1		1										
152									1					
153									1					
154									1					
155									1					11/25 - 40 degrees
156	1			1										snow on ground
157	1			1										11am, 14 children
158		1		1										
159	1			1										
160		1		1										
161		1		1										
162		1		1										
163									1					
164									1					
165		1		1										
166		1		1										
167		1		1										
168		1		1										
169		1		1										
170		1		1										

Climber																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
S	P	G		F	C	E	D	G		U		A	H	G	R		
171										1						11/26 - 40 degrees damp, snow on ground	
172										1						10am, 13 children	
173										1							
174	1				1												
175		1			1												
176		1			1											putting on snow with shovels	
177										1							
178										1							
179	1				1											hiding underneath	
180		1			1												
181		1			1											really fly off with snowpants on	
182		1			1												
183										1							
184										1							
185										1							
186										1							
187										1							
188										1							
189	1				1											12/1 - 38 degrees, windy, no snow	
190		1			1											11am , 18 children	
191			1		1												
192			1		1												
193			1		1												
194			1		1												
195			1		1												
196			1				1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U		A	H	G	R
197			1	1										
198			1	1										
199		1		1										
200		1		1										
201		1		1										
202		1		1										
203		1		1										
204		1		1										
205		1		1										
206		1		1										
207		1		1										
208		1		1										12/3 - 40-45 degrees, dry and mild
209			1	1										11am, 21 children
210			1	1										
211			1	1										
212			1	1										
213			1	1										
214			1	1										
215			1	1										
216			1	1										
217			1	1										
218			1	1										
219			1	1										
220			1	1										
221			1	1										
222			1	1										
223		1		1										climbing and hiding
224			1	1										
225			1	1										

Climber																
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G	F	C	E	D	G	U			A	H	G	R	
226			1				1									caught in trap
227			1				1									bad guys
228			1	1												12/4 - 35 - 40 degrees, breezy, cloudy 11am, 22 children
229			1	1												
230			1	1												
231			1	1												
232			1	1												
233			1	1												
234			1	1												
235		1		1												
236		1		1												
237		1		1												
238			1	1												
239			1	1												
240			1	1												
241			1	1												
242			1	1												
243		1		1												
244									1							12/9 - 35 - 40 degrees Some wet snow 11am, 8 children other classroom on field trip
245									1							
246									1							
247									1							
248		1		1												
249									1							
250									1							
251	1			1												

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
252	1			1										shovel snow onto slide
253	1			1										
254	1			1										
255									1					
256									1					
257									1					
258									1					
259									1					
260									1					
261	1			1										
262	1			1										12/15 - 38 degrees previous snowfall, melting, slushy spots 11am, 10 children
263									1					
264									1					
265									1					
266									1					
267									1					
268									1					
269									1					
270		1		1										
271		1		1										
272		1		1										
273		1		1										
274									1					12/16 - 30 degrees, cold
275									1					
276		1		1										
277									1					
278									1					

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
279	1			1										11am, 10 children
280		1		1										
281									1					
282	1			1										
283	1			1										
284	1			1										Come and get me
285									1					
286	1			1										
287	1			1										
288			1	1										
289									1					
290			1					1						
291			1					1						
292			1					1						
293			1	1										
294			1	1										
295			1	1										
296			1	1										
297			1	1										
298			1	1										12/17 - 35 degrees, mild 11am, 20 children
299			1	1										
300			1	1										
301			1	1										
302			1	1										
303			1	1										roll snow down slide kick snow down slide
304		1		1										
305		1		1										
306		1		1										
307		1		1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
308		1		1										
309		1		1										
310		1		1										put snow on slide to go faster
311			1	1										they get "air" at the bottom
312			1	1										
313			1	1										
314			1	1										
315			1	1										
316			1	1										
317			1	1										
318			1	1										
319			1	1										
320			1	1										
321									1					1/5 - 38 degrees, partly cloudy
322									1					11am, 19 children
323									1					
324									1					
325									1					
326									1					
327									1					
328		1		1										ropes
329									1					
330		1		1										
331									1					
332									1					
333									1					
334		1		1										
335		1		1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
336		1		1										
337			1	1										
338			1	1										
339		1		1										
340			1	1										
341		1		1										
342		1		1										
343			1	1										
344			1	1										
345									1					1/6 - 30 degrees, sunny, no wind 11am, 17 children
346									1					
347		1		1										
348		1		1										
349		1		1										
350		1		1										
351		1		1										
352									1					
353		1		1										
354			1	1										
355			1	1										
356			1	1										
357		1		1										
358			1	1										
359			1	1										
360			1	1										
361			1	1										
362		1		1										
363		1		1										
364		1		1										
365	1			1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
366		1		1										
367		1		1										
368		1		1										
369		1		1										1/30 - 30 degrees a lot of snow with very few clear patches 11am, 12 children playing "ship"
370			1	1										
371			1					1						
372			1					1						
373			1					1						
374									1					
375		1		1										
376		1		1										
377			1	1										
378			1	1										
379			1	1										
380			1	1										
381		1		1										
382		1		1										
383		1		1										
384		1		1										
385			1	1										
386			1	1										
387			1	1										
388			1	1										
389		1		1										2/2 - 25 degrees snow on site 11am, 20 children
390		1		1										
391		1		1										
392		1		1										
393		1		1										
394		1		1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
395		1		1										
396		1		1										
397	1			1										
398	1			1										
399									1					
400	1			1										
401	1			1										
402									1					
403		1		1										
404									1					
405	1			1										
406	1			1										
407		1		1										
408		1		1										
409		1		1										
410		1		1										
411	1			1										
412	1			1										
413	1			1										2/10 - 40 degrees, cloudy
414	1			1										11am, 7 children
415	1			1										other classroom on fieldtrip
416	1			1										
417		1		1										
418		1		1										
419			1				1							"Who's watching that baby?"
420			1				1							
421			1				1							
422		1		1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U		A	H	G	R
423		1		1										
424		1		1										
425		1		1										
426		1		1										
427		1		1										
428		1		1										
429		1		1										
430		1		1										
431		1		1										
432		1		1										
433		1		1										
434		1		1										
435		1		1										2/11 - 50 degrees, cloudy
436		1		1										10am, 20 children
437		1		1										
438		1		1										
439		1		1										
440									1					
441		1		1										
442		1		1										
443		1		1										
444		1		1										
445			1	1										race sliding
446			1	1										
447			1	1										
448		1		1										
449		1		1										
450		1		1										
451		1		1										
452			1	1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
453			1	1										singing loudly "American Pie"
454			1	1										
455	1						1							
456									1					
457		1		1										
458		1		1										
459									1					2/16 - 30 degrees, windy
460		1		1										11am, 8 children
461		1		1										other classroom on fieldtrip
462		1		1										
463									1					not much snow but very icy sections
464									1					
465									1					
466									1					
467									1					
468									1					
469			1	1										
470			1	1										
471			1	1										
472			1	1										
473									1					2/18 - 30 degrees, windy, snow flurries
474									1					11am, 12 children
475									1					
476									1					
477									1					

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
478	1			1										
479		1		1										
480		1		1										
481									1					
482	1			1										
483	1			1										
484		1		1										
485	1			1										
486									1					
487		1		1										2/19 - 35 degrees
488		1		1										10am, 11 children
489			1	1										
490			1	1										
491			1	1										
492		1		1										
493	1			1										
494	1			1										
495		1		1										
496		1		1										
497		1		1										
498		1		1										
499		1		1										
500		1		1										
501		1		1										
502		1		1										
503		1		1										2/26 - 40 degrees, mild
504		1		1										11am, 21 children
505		1		1										
506		1		1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
507			1	1										
508		1		1										
509		1		1										
510		1		1										
511			1				1							
512			1	1										
513		1		1										
514		1		1										
515			1	1										
516									1					
517			1	1										
518		1		1										
519		1		1										
520		1		1										
521		1		1										
522	1			1										
523		1		1										
524		1		1										
525			1	1										
526			1	1										
527		1		1										2/27 - 45 degrees
528		1		1										11am, 20 children
529		1		1										
530			1	1										
531			1	1										
532		1		1										
533		1		1										
534		1		1										
535		1		1										
536			1	1										
537		1		1										

Climber														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
538			1	1										
539			1	1										
540			1	1										
541			1	1										
542		1		1										
543		1		1										
544		1		1										
545		1		1										
546		1		1										

Climber																				
PERCENTAGE	TOTAL OBSERVATIONS	RECORDED OBSERVATIONS	Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Notes				
				Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules					Anxious	Hovering	Aggression	Rough & Tumble
				S	P	G		F	C	E	D	G					A	H	G	R
8.6%	546	47																		
39.0%	546	213																		
34.6%	546	189																		
79.1%	546	432																		
0.0%	546	0																		
0.0%	546	0																		
2.0%	546	11																		
1.1%	546	6																		
17.8%	546	97																		
0.0%	546	0																		
0.0%	546	0																		
0.0%	546	0																		
0.0%	546	0																		
CLIMBER RESULTS																				

Climber																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	449	449	449		449	449	449	449	449								
breakdown	0.1	0.47	0.42		0.96	0	0	0.02	0.01								

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
1									1					11/5 - 60 degrees, balmy partly sunny 10am, 20 children rolling down knoll
2			1			1								
3			1				1							
4			1	1										
5			1	1										
6									1					
7		1		1										
8	1					1								
9			1	1										
10	1			1										
11		1		1										
12		1		1										
13	1			1										
14									1					
15			1					1						
16									1					11/6 - 55 degrees, foggy 11am, 16 children gate initially closed
17									1					
18									1					
19									1					
20									1					
21									1					
22									1					
23									1					
24									1					
25									1					
26									1					
27									1					

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
28									1					
29									1					
30									1					
31									1					
32			1	1										gate open
33			1				1							jump off into leaves
34	1			1										
35			1	1										
36									1					11/7 - 55 degrees 10am - 17 children
37		1		1										
38		1		1										
39	1			1										
40	1			1										
41		1		1										
42			1	1										
43			1	1										
44									1					
45									1					
46	1			1										
47	1			1										
48									1					
49									1					
50		1		1										
51		1		1										
52		1		1										
53		1		1										
54									1					11/10 - 45 degrees, mild 10am - 18 children
55									1					

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
56									1					
57	1			1										
58	1			1										
59									1					
60									1					
61									1					
62									1					
63									1					
64									1					
65									1					
66									1					
67		1		1										
68									1					
69									1					
70		1		1										
71	1			1										
72		1		1										
73		1		1										
74			1	1										11/11 - 45 degrees, dry, little windy 4pm
75			1	1										4pm, 25 children
76	1			1										
77	1						1							lion girl on top
78	1						1							doggie
79									1					
80									1					
81			1	1										
82			1	1										
83			1	1										
84			1					1						

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
85			1	1										11/12 - 45degrees, mild 10am, 17 children
86			1	1										
87			1	1										
88			1	1										
89			1	1										
90			1	1										
91			1	1										
92			1	1										
93			1	1										
94			1	1										
95									1					
96									1					
97									1					
98									1					
99									1					
100									1					
101									1					
102									1					
103		1		1										11/13 - 45 degrees 11am, 19 children
104		1		1										
105		1		1										
106									1					
107		1		1										
108		1		1										
109		1		1										
110		1		1										
111									1					
112									1					
113									1					
114									1					

Grassy Knoll																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
115		1			1												
116		1			1												
117											1						
118		1			1												
119											1						11/14 - 50 degrees, mild
120											1						11am, 20 children
121											1						
122											1						just back in from fire drill
123	1				1												
124											1						
125											1						
126											1						
127											1						
128											1						gate closed when one class is out, until other arrives
129											1						
130											1						
131											1						
132											1						
133											1						
134											1						
135											1						11/24 - 40 degrees
136											1						some snow on ground
137											1						11am, 16 children
138											1						
139		1			1												

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
140		1		1										
141	1			1										
142	1			1										
143	1			1										
144		1		1										
145		1		1										
146	1			1										
147									1					
148									1					
149									1					
150									1					
151									1					
152			1	1										
153			1	1										
154			1	1										
155			1	1										11/25 - 40 degrees
156			1	1										snow on ground
157			1	1										11am, 14 children
158			1	1										
159			1	1										
160			1					1						being jumping frog, jumping bunny
161			1					1						other animals
162			1					1						jumping off knoll
163			1					1						
164			1	1										
165			1	1										
166		1		1										
167									1					
168									1					
169									1					

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
170									1					
171									1					11/26 - 40 degrees damp, snow on ground 10am, 13 children gate closed gate open
172									1					
173									1					
174									1					
175									1					
176									1					
177									1					
178									1					
179									1					
180									1					
181									1					
182									1					
183									1					
184									1					
185									1					
186	1			1										
187			1	1										
188			1	1										
189									1					12/1 - 38 degrees, windy, no snow 11am , 18 children ladder on lawn from eaves contractor
190									1					
191									1					
192									1					
193									1					
194									1					

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
195									1					
196									1					
197									1					
198									1					
199									1					
200									1					
201									1					
202									1					
203									1					
204									1					
205									1					
206									1					
207									1					
208									1					12/3 - 40-45 degrees, dry and mild
209									1					11am, 21 children
210									1					
211									1					
212									1					
213									1					
214									1					
215									1					gate is closed because of gutter installation
216									1					
217									1					
218									1					
219									1					
220									1					
221									1					

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
222									1					
223									1					
224									1					
225									1					
226									1					
227									1					
228									1					12/4 - 35 - 40 degrees, breezy, cloudy
229									1					11am, 22 children
230	1			1										
231			1	1										jumping off knoll
232									1					
233									1					
234		1		1										
235	1			1										
236		1		1										
237		1		1										
238		1		1										
239	1			1										
240		1		1										
241			1	1										
242									1					
243									1					
244									1					12/9 - 35 - 40 degrees
245									1					Some wet snow
246									1					11am, 8 children
247									1					other classroom on field trip

Grassy Knoll																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
248											1						
249											1						
250	1				1												
251		1			1												playing red rover
252			1		1												
253			1		1												
254			1						1								
255			1						1								
256			1						1								
257			1						1								
258			1						1								
259			1						1								
260			1						1								
261			1						1								
262			1		1												sliding down knoll laying backwards
263			1		1												
264			1		1												
265			1		1												
266			1		1												12/15 - 38 degrees
267			1		1												previous snowfall, melting, slushy spots
268											1						11am, 10 children
269											1						
270											1						
271	1				1												
272											1						
273											1						
274											1						
275											1						
276											1						

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
277									1					
278		1		1										12/16 - 30 degrees, cold 11am, 10 children rolling down knoll
279									1					
280									1					
281	1			1										
282									1					
283									1					
284									1					
285									1					
286	1			1										
287									1					
288	1			1										12/17 - 35 degrees, mild 11am, 20 children
289									1					
290									1					
291	1			1										
292	1			1										
293	1			1										
294									1					
295		1		1										
296		1		1										
297		1		1										
298			1	1										12/17 - 35 degrees, mild 11am, 20 children
299			1	1										
300			1	1										
301			1	1										
302			1	1										
303			1	1										

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
304			1	1										sledding with thin plastic sleds
305			1	1										
306			1	1										
307			1	1										
308			1	1										
309			1	1										
310			1	1										
311			1	1										
312			1	1										
313			1	1										
314			1	1										
315			1	1										
316			1	1										
317			1	1										
318	1			1										
319			1	1										
320			1	1										
321									1					1/5 - 38 degrees, partly cloudy 11am, 19 children
322									1					
323									1					
324									1					
325		1		1										
326		1		1										
327									1					
328									1					
329									1					
330									1					
331	1			1										
332		1		1										

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
333									1					
334									1					
335									1					
336		1		1										
337		1		1										
338									1					
339	1			1										
340		1		1										
341									1					
342									1					
343		1		1										
344		1		1										
345		1		1										1/6 - 30 degrees, sunny, no wind 11am, 17 children
346		1		1										
347	1			1										
348	1			1										
349									1					
350									1					
351		1		1										
352		1		1										
353	1			1										
354	1			1										
355		1		1										
356		1		1										
357									1					
358									1					
359									1					
360									1					
361									1					
362									1					

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
363									1					
364									1					
365		1		1										
366		1		1										
367		1		1										
368		1		1										
369									1					1/30 - 30 degrees a lot of snow with very few clear patches 11am, 12 children gate closed
370									1					
371									1					
372									1					
373									1					
374									1					
375									1					
376									1					
377									1					
378									1					
379									1					
380									1					
381									1					
382									1					
383									1					
384									1					
385									1					
386									1					
387									1					
388									1					
389		1		1										2/2 - 25 degrees snow on site 11am, 20 children
390		1		1										
391		1		1										

Grassy Knoll																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
392		1			1												
393		1			1												
394		1			1												
395											1						
396		1			1												
397											1						
398											1						
399		1			1												
400		1			1												
401		1			1												
402											1						
403											1						
404											1						
405	1				1												
406											1						
407											1						
408	1				1												
409											1						
410											1						
411											1						
412											1						
413											1						2/10 - 40 degrees, cloudy
414											1						11am, 7 children
415											1						other classroom on fieldtrip
416											1						
417											1						
418											1						
419											1						
420											1						

Grassy Knoll													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
421									1				
422									1				
423									1				
424			1	1									
425		1		1									
426		1		1									
427									1				
428									1				
429									1				
430									1				
431									1				
432									1				
433									1				
434									1				
435		1		1									2/11 - 50 degrees, cloudy
436		1		1									10am, 20 children
437	1			1									
438		1		1									
439			1	1									rolling ball down knoll
440			1	1									
441		1		1									
442		1		1									
443			1	1									
444			1	1									
445									1				
446									1				
447	1			1									
448	1			1									
449		1		1									
450		1		1									

Grassy Knoll																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
451	1				1												
452	1				1												
453											1						
454											1						
455											1						
456											1						
457	1				1												
458											1						
459											1						2/16 - 30 degrees, windy
460											1						11am, 8 children
461											1						other classroom on fieldtrip
462											1						
463											1						not much snow but very icy sections
464											1						
465											1						gate closed
466											1						
467											1						
468											1						
469											1						
470											1						
471											1						
472											1						
473											1						2/18 - 30 degrees, windy, snow flurries
474											1						11am, 12 children
475											1						
476											1						

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
477									1					
478									1					
479			1	1										
480			1	1										
481									1					
482									1					
483									1					
484									1					
485									1					
486									1					
487									1					2/19 - 35 degrees
488									1					10am, 11 children
489									1					
490									1					
491									1					
492									1					
493									1					
494									1					
495									1					
496									1					
497									1					
498									1					
499									1					
500									1					
501									1					
502									1					
503									1					2/26 - 40 degrees, mild
504									1					11am, 21 children
505									1					

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
506									1					
507			1	1										
508			1	1										
509	1			1										
510		1		1										
511									1					
512									1					
513		1		1										
514		1		1										
515		1		1										
516	1			1										
517									1					
518		1		1										
519			1	1										
520			1	1										
521			1	1										
522			1	1										
523			1	1										
524			1	1										
525									1					
526									1					
527									1					2/27 - 45 degrees
528									1					11am, 20 children
529		1		1										
530		1		1										
531		1		1										
532		1		1										
533			1	1										
534			1	1										
535			1	1										
536			1	1										

Grassy Knoll														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
537	1			1										
538	1			1										
539									1					
540									1					
541									1					
542	1			1										
543			1	1										
544			1	1										
545			1	1										
546			1	1										

[illegible]

Grassy Knoll																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	242	242	242		242	242	242	242	242								
breakdown	0.21	0.35	0.44		0.92	0	0.01	0.02	0.06								

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
1									1					11/5 - 60 degrees, balmy partly sunny 10am, 20 children
2									1					
3									1					
4									1					
5									1					
6									1					
7									1					
8		1		1										
9									1					
10									1					
11									1					
12									1					
13									1					
14	1					1								
15									1					
16									1					11/6 - 55 degrees, foggy 11am, 16 children
17									1					
18									1					
19									1					
20									1					
21									1					
22		1				1								
23									1					
24									1					
25									1					
26									1					
27									1					

Dry Creek Bed																		
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes	
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules									
	S	P	G		F	C	E	D	G		U		A	H	G	R		
28			1		1						1							
29											1							
30											1							
31											1							
32											1							
33											1							
34											1							
35											1							
36											1						11/7 - 55 degrees 10am - 17 children	
37											1							
38											1							
39											1							
40											1							
41											1							
42											1							
43											1							
44											1							
45											1							
46											1							1
47											1							1
48											1							
49											1							
50											1							
51											1							
52											1							
53											1							
54											1						11/10 - 45 degrees, mild 10am - 18 children	
55											1							
56											1							

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
57									1					
58									1					
59	1			1										
60	1			1										
61									1					
62									1					
63									1					
64									1					
65									1					
66									1					
67									1					
68									1					
69									1					
70	1			1										
71	1			1										
72									1					
73									1					
74		1		1										11/11 - 45 degrees, dry, little windy 4pm
75									1					4pm, 25 children
76									1					
77									1					
78									1					
79									1					
80									1					
81									1					
82									1					
83									1					
84									1					

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
85											1						11/12 - 45degrees, mild 10am, 17 children
86											1						
87											1						
88											1						
89											1						
90											1						
91											1						
92											1						
93											1						
94											1						
95											1						
96											1						
97											1						
98											1						
99											1						
100											1						
101											1						
102											1						
103											1					11/13 - 45 degrees 11am, 19 children	
104											1						
105											1						
106											1						
107											1						
108											1						
109											1						
110											1						
111											1						
112	1				1												
113	1				1												
114	1				1												

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
115	1				1												
116	1				1												
117	1				1												
118	1				1												
119											1						11/14 - 50 degrees, mild
120											1						11am, 20 children
121											1						
122											1						just back in from fire drill
123											1						
124											1						
125											1						
126											1						
127											1						
128											1						
129											1						
130											1						
131											1						
132											1						
133											1						
134		1			1												balancing on stones
135											1						11/24 - 40 degrees
136											1						some snow on ground
137											1						11am, 16 children
138											1						
139											1						
140	1				1												
141											1						

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
142	1			1										
143	1			1										
144									1					
145									1					
146									1					
147									1					
148									1					
149									1					
150									1					
151									1					
152									1					
153									1					
154									1					
155									1					11/25 - 40 degrees
156									1					snow on ground
157									1					11am, 14 children
158									1					
159									1					
160									1					
161									1					
162									1					
163									1					
164									1					
165									1					
166									1					
167	1			1										
168	1			1										
169		1		1										
170	1			1										

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
171									1					11/26 - 40 degrees damp, snow on ground
172									1					10am, 13 children
173	1			1										balancing on stones
174	1			1										
175									1					
176		1				1								
177									1					
178									1					
179									1					
180									1					
181		1		1										
182		1		1										sitting in bed playing with props
183			1	1										
184		1		1										
185		1		1										
186		1			1									
187		1		1										
188		1		1										
189									1					12/1 - 38 degrees, windy, no snow
190									1					11am , 18 children
191									1					
192									1					
193									1					
194									1					
195	1			1										standing in it
196									1					
197									1					

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
198											1						
199											1						
200											1						
201											1						
202											1						
203											1						
204											1						
205	1				1												balancing on stones
206											1						
207											1						
208											1						12/3 - 40-45 degrees, dry and mild
209											1						11am, 21 children
210											1						
211											1						
212											1						
213											1						
214											1						
215											1						
216											1						
217											1						
218											1						
219											1						
220											1						
221											1						
222											1						
223											1						
224											1						
225											1						
226											1						

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
227											1						
228											1						12/4 - 35 - 40 degrees, breezy, cloudy 11am, 22 children
229											1						
230											1						
231											1						
232											1						
233											1						
234											1						
235											1						
236											1						
237											1						
238											1						
239											1						
240											1						
241											1						
242											1						
243											1						
244											1					12/9 - 35 - 40 degrees Some wet snow 11am, 8 children other classroom on field trip moving snow from rocks	
245	1				1												
246											1						
247											1						
248											1						
249											1						
250	1				1												
251											1						

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
252											1						
253											1						
254											1						
255											1						
256											1						
257											1						
258											1						
259											1						
260											1						
261											1						
262											1						
263											1						
264											1						
265											1						
266											1						12/15 - 38 degrees
267											1						previous snowfall, melting, slushy spots
268			1				1										11am, 10 children
269			1				1										
270			1				1										found catepillar
271											1						discussion of hibernating or dead
272			1				1										
273			1				1										
274											1						
275											1						cleaning off stones
276											1						stomping in slush
277		1			1												
278											1						12/16 - 30 degrees, cold

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
279									1					11am, 10 children
280									1					
281	1			1										stepping on stones
282									1					
283									1					
284									1					
285									1					
286									1					
287									1					
288									1					
289									1					
290									1					
291	1			1										walking down bed on rocks, balancing
292									1					
293									1					
294									1					
295									1					
296									1					
297									1					
298									1					12/17 - 35 degrees, mild
299	1			1										11am, 20 children
300									1					
301	1			1										
302									1					
303	1			1										
304									1					
305									1					
306									1					
307									1					

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
308									1					
309									1					
310									1					
311									1					
312									1					
313	1			1										
314									1					
315									1					
316									1					
317									1					
318									1					
319									1					
320									1					
321									1					1/5 - 38 degrees, partly cloudy
322									1					11am, 19 children
323									1					
324									1					
325									1					
326									1					
327		1		1										crawling around the bed
328		1		1										
329		1		1										
330									1					
331									1					
332									1					
333									1					
334									1					
335									1					
336									1					
337									1					

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
338											1						
339											1						
340											1						
341											1						
342											1						
343											1						
344											1						
345											1						1/6 - 30 degrees, sunny, no wind
346											1						11am, 17 children
347											1						
348											1						
349											1						
350											1						
351											1						
352											1						
353											1						
354											1						
355											1						
356											1						
357											1						
358											1						
359											1						
360											1						
361											1						
362											1						
363											1						
364											1						
365											1						
366											1						
367											1						

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
368									1					
369									1					1/30 - 30 degrees a lot of snow with very few clear patches 11am, 12 children
370									1					
371									1					
372									1					
373									1					
374									1					
375									1					
376									1					
377									1					
378									1					
379									1					
380									1					
381									1					
382									1					
383									1					
384									1					
385									1					
386									1					
387									1					
388									1					
389									1					2/2 - 25 degrees snow on site 11am, 20 children
390									1					
391									1					
392									1					
393									1					
394									1					
395									1					
396									1					

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
397									1					
398									1					
399									1					
400									1					
401									1					
402									1					
403									1					
404									1					
405									1					
406									1					
407									1					
408									1					
409									1					
410									1					
411									1					
412									1					
413									1					2/10 - 40 degrees, cloudy
414									1					11am, 7 children
415									1					other classroom on fieldtrip
416									1					
417									1					
418									1					
419									1					
420									1					
421		1		1										
422									1					
423									1					
424									1					
425									1					

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
426											1						
427											1						
428											1						
429											1						
430											1						
431											1						
432											1						
433											1						
434											1						
435											1						2/11 - 50 degrees, cloudy
436											1						10am, 20 children
437											1						
438											1						
439											1						
440											1						
441											1						
442											1						
443											1						
444											1						
445											1						
446											1						
447											1						
448											1						
449											1						
450											1						
451											1						
452											1						
453											1						
454											1						
455											1						

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
456									1					
457									1					
458									1					
459									1					2/16 - 30 degrees, windy
460									1					11am, 8 children
461									1					other classroom on fieldtrip
462									1					
463									1					not much snow but very icy sections
464									1					
465									1					
466									1					
467									1					
468									1					
469									1					
470									1					
471									1					
472									1					
473									1					2/18 - 30 degrees, windy, snow flurries
474									1					11am, 12 children
475									1					
476									1					
477	1			1										drive bike in/out
478									1					
479									1					
480									1					
481									1					

Dry Creek Bed														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
482									1					
483									1					
484									1					
485									1					
486									1					
487									1					2/19 - 35 degrees 10am, 11 children
488									1					
489									1					
490									1					
491									1					
492									1					
493									1					
494									1					
495									1					
496									1					
497									1					
498									1					
499									1					
500									1					
501									1					
502	1													
503	1	1	1	1	1	1	1	1	1	1	1	1	2/26 - 40 degrees, mild	
504	1			1										11am, 21 children
505	1			1										
506	1			1										walking on rocks
507									1					
508									1					
509									1					
510									1					

Dry Creek Bed													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
511									1				
512									1				
513									1				
514									1				
515									1				
516									1				
517									1				
518									1				
519									1				
520									1				
521									1				
522									1				
523									1				
524									1				
525									1				
526									1				
527									1				2/27 - 45 degrees
528									1				11am, 20 children
529									1				
530									1				
531									1				
532									1				
533									1				
534									1				
535									1				
536	1			1									
537	1			1									
538		1		1									
539									1				
540									1				
541									1				

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
542											1						
543											1						
544											1						
545											1						
546											1						

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
PERCENTAGE	7.0%	3.7%	1.3%		10.3%	0.2%	1.5%	0.0%	0.0%		88.1%		0.0%	0.0%	0.0%	0.0%	
TOTAL OBSERVATIONS	546	546	546		546	546	546	546	546		546		546	546	546	546	
RECORDED OBSERVATIONS	38	20	7		56	1	8	0	0		481		0	0	0	0	
DRY CREEK BED RESULTS																	

Dry Creek Bed																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
S	P	G		F	C	E	D	G		U		A	H	G	R		
occupied	65	65	65		65	65	65	65	65								
breakdown	0.58	0.31	0.11		0.86	0.02	0.12	0	0								

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
1									1					11/5 - 60 degrees, balmy partly sunny 10am, 20 children
2									1					
3									1					
4									1					
5									1					
6									1					
7									1					
8									1					
9			1		1									11/6 - 55 degrees, foggy 11am, 16 children
10		1			1									
11		1			1									
12			1		1									
13			1		1									
14	1				1									
15	1				1									
16		1		1										11/6 - 55 degrees, foggy 11am, 16 children
17									1					
18									1					
19		1		1										
20									1					
21									1					
22		1		1										
23									1					
24									1					
25									1					
26									1					
27	1			1										

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
28	1					1								
29	1			1										
30									1					
31	1			1										
32			1		1									
33		1		1										
34			1		1									
35			1		1									
36		1		1										11/7 - 55 degrees
37		1		1										10am - 17 children
38			1	1										
39			1	1										
40			1		1									
41			1		1									
42			1		1									
43			1		1									
44									1					
45									1					
46			1		1									
47			1		1									
48									1					
49			1		1									
50			1		1									
51			1		1									
52			1		1									
53			1		1									
54	1			1										11/10 - 45 degrees, mild
55	1			1										10am - 18 children
56									1					

Sand & Water																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
57											1						
58											1						
59											1						
60			1			1											
61			1			1											
62			1			1											
63			1			1											
64				1			1										
65				1			1										
66				1			1										
67				1			1										
68			1		1												
69			1		1												
70			1			1											
71			1			1											
72											1						
73											1						
74											1					11/11 - 45 degrees, dry, little windy 4pm 4pm, 25 children	
75											1						
76											1						
77											1						
78											1						
79											1						
80											1						
81											1						
82											1						
83											1						
84											1						

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
85		1		1										11/12 - 45degrees, mild 10am, 17 children
86		1		1										
87		1		1										
88									1					
89		1		1										
90		1		1										
91	1			1										
92	1			1										
93		1		1										
94		1		1										
95			1	1										
96			1	1										
97			1	1										
98			1	1										
99			1		1									
100			1		1									
101			1		1									
102			1		1									
103									1					11/13 - 45 degrees 11am, 19 children
104	1			1										
105	1			1										
106	1			1										
107	1				1									
108	1				1									
109	1				1									
110	1				1									
111	1				1									
112									1					
113									1					
114									1					

Sand & Water																
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
S	P	G	F	C	E	D	G	U	A	H	G	R				
115									1							
116									1							
117									1							
118									1							
119									1					11/14 - 50 degrees, mild		
120			1	1										11am, 20 children		
121			1		1											
122			1		1									just back in from fire drill		
123			1		1											
124			1		1											
125			1		1											
126			1		1											
127			1		1											
128			1		1											
129			1		1											
130			1		1											
131			1		1									three same boys whole time		
132			1		1											
133			1		1											
134			1	1								1		throwing sand at another boy		
135		1		1										11/24 - 40 degrees		
136		1		1										some snow on ground		
137		1		1										11am, 16 children		
138		1		1												
139		1		1												

Sand & Water																
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G	F	C	E	D	G	U			A	H	G	R	
140		1		1												snow in pails
141		1		1												
142									1							
143									1							
144									1							
145									1							
146	1			1												
147	1			1												
148									1							
149									1							
150									1							
151									1							
152									1							
153									1							
154									1							
155									1							11/25 - 40 degrees snow on ground 11am, 14 children
156									1							
157									1							
158									1							
159									1							
160									1							
161									1							
162									1							
163									1							
164									1							
165									1							
166									1							
167									1							
168									1							
169									1							
170									1							

Sand & Water																
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
S	P	G	F	C	E	D	G	U	A	H	G	R				
171		1			1									11/26 - 40 degrees damp, snow on ground 10am, 13 children		
172		1			1											
173		1		1												
174									1					using cones		
175									1							
176									1							
177									1							
178									1							
179	1				1											
180	1			1												
181									1							
182									1							
183									1							
184									1							
185									1							
186									1							
187									1							
188									1							
189									1					12/1 - 38 degrees, windy, no snow 11am , 18 children		
190									1							
191	1				1											
192	1				1											
193	1				1											
194		1		1												
195		1		1												
196		1		1												
197			1	1												

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
198			1	1										
199			1	1										
200	1			1										
201			1	1										
202		1		1										
203		1		1										
204			1	1										
205			1		1									
206			1		1									
207			1		1									
208		1		1										12/3 - 40-45 degrees, dry and mild 11am, 21 children
209		1		1										
210		1		1										
211									1					
212	1			1										
213	1			1										
214		1		1										
215	1			1										
216	1			1										
217									1					
218									1					
219	1			1										
220	1			1										
221									1					
222									1					
223									1					
224									1					
225									1					
226									1					

Sand & Water															
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules							
	S	P	G	F	C	E	D	G							
227									1						
228		1		1											12/4 - 35 - 40 degrees, breezy, cloudy 11am, 22 children
229			1	1											
230			1		1										
231			1	1											
232			1		1										
233			1		1										
234			1		1										
235	1			1											
236			1		1										
237									1						
238									1						
239									1						
240									1						
241									1						
242									1						
243									1						
244									1						12/9 - 35 - 40 degrees Some wet snow 11am, 8 children other classroom on field trip mixing snow with sand
245	1			1											
246									1						
247									1						
248									1						
249									1						
250	1			1											
251									1						

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
252	1			1										
253	1			1										
254	1			1										
255									1					
256									1					
257									1					
258									1					
259									1					
260									1					
261									1					
262									1					
263									1					
264									1					
265									1					
266		1		1										12/15 - 38 degrees previous snowfall, melting, slushy spots 11am, 10 children
267		1		1										
268									1					
269									1					
270									1					
271	1			1										
272	1			1										
273									1					
274									1					
275									1					
276									1					
277									1					
278									1					12/16 - 30 degrees, cold 11am, 10 children
279									1					

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
280									1					
281									1					
282									1					
283			1				1							playing ice rink
284			1				1							
285	1			1										shoveling
286									1					
287									1					
288									1					
289									1					
290									1					
291									1					
292									1					
293									1					
294									1					
295									1					
296									1					
297									1					
298									1					12/17 - 35 degrees, mild
299	1			1										11am, 20 children
300									1					
301	1			1										
302									1					
303									1					
304	1			1										
305		1		1										
306	1			1										
307		1		1										
308									1					
309									1					

Sand & Water																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
310	1				1						1						
311											1						
312											1						
313											1						
314											1						
315											1						
316											1						
317											1						
318											1						
319											1						
320	1																
321	1										1						1/5 - 38 degrees, partly cloudy 11am, 19 children
322											1						
323											1						
324											1						
325											1						
326											1						
327											1						
328											1						
329											1						
330											1						
331											1						
332											1						
333											1						
334											1						
335											1						
336											1						
337											1						
338											1						
339											1						

Sand & Water																				
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes			
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules											
	S	P	G		F	C	E	D	G		U		A	H	G	R				
340											1									
341											1									
342											1									
343											1									
344											1									
345											1						1/6 - 30 degrees, sunny, no wind 11am, 17 children			
346											1									
347											1									
348											1									
349											1									
350											1									
351											1									
352											1									
353											1							1		
354											1							1		
355																		1	1	
356																		1	1	
357											1								1	
358											1								1	
359																				1
360																				1
361																				1
362																				1
363																				1
364																				1
365																				1
366																				1
367																				1
368																				1

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
S	P	G	F	C	E	D	G	U	A	H	G	R		
369		1		1									1/30 - 30 degrees	
370		1		1									a lot of snow with very few clear patches	
371								1					11am, 12 children	
372								1						
373								1					leaning over fence	
374								1					reaching for snow on other side	
375								1						
376								1						
377								1						
378								1						
379								1						
380								1						
381								1						
382								1						
383								1						
384								1						
385								1						
386								1						
387								1						
388								1						
389								1					2/2 - 25 degrees	
390								1					snow on site	
391								1					11am, 20 children	
392								1						
393								1						
394								1						
395								1						
396								1						
397								1						

Sand & Water																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
398											1						
399											1						
400											1						
401											1						
402											1						
403											1						
404											1						
405											1						
406											1						
407											1						
408											1						
409											1						
410											1						
411											1						
412											1						
413											1						2/10 - 40 degrees, cloudy
414											1						11am, 7 children
415											1						other classroom on fieldtrip
416											1						
417											1						
418											1						
419											1						
420											1						
421											1						
422											1						
423											1						
424											1						
425											1						
426											1						

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
427	1			1										shoveling
428	1			1										
429	1			1										
430	1			1										
431	1			1										
432	1			1										
433		1		1										
434	1			1										
435									1					2/11 - 50 degrees, cloudy
436									1					10am, 20 children
437									1					
438	1					1								touching sand left in trough
439									1					
440		1		1										stomping in puddle
441									1					
442									1					
443			1	1										jumping in puddle
444									1					
445									1					
446	1			1										driving bike in puddle
447	1			1										wading in puddle
448									1					
449									1					
450									1					
451									1					
452									1					
453									1					
454									1					

Sand & Water																
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G	F	C	E	D	G	U			A	H	G	R	
455									1							
456									1							
457									1							
458									1							
459									1							2/16 - 30 degrees, windy
460									1							11am, 8 children
461									1							other classroom on fieldtrip
462									1							
463			1		1											not much snow but very icy sections
464			1		1											
465			1		1											
466			1		1											
467			1	1												
468			1	1												
469			1		1											
470			1		1											
471			1		1											
472			1	1												
473									1							2/18 - 30 degrees, windy, snow flurries
474									1							11am, 12 children
475									1							
476									1							
477									1							
478									1							
479									1							
480									1							

Sand & Water														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
481									1					
482									1					
483									1					
484									1					
485									1					
486									1					
487									1					2/19 - 35 degrees
488									1					10am, 11 children
489									1					
490									1					
491	1			1										
492	1			1										running in/out of puddle
493									1					
494									1					
495									1					
496									1					
497									1					
498									1					
499									1					
500									1					
501									1					
502									1					
503									1					2/26 - 40 degrees, mild
504									1					11am, 21 children
505									1					
506									1					
507									1					
508									1					

Sand & Water																					
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes						
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules													
	S	P	G	F	C	E	D	G	U		A	H	G	R							
509	1			1					1												
510																					
511																1					
512																1					
513																1					
514																1					
515																1					
516																1					
517																1					
518																1					
519																1					
520																1					
521																1					
522																1					
523																1					
524																1					
525								1													
526								1													
527									1					2/27 - 45 degrees							
528									1					11am, 20 children							
529									1												
530									1												
531									1												
532									1												
533									1												
534									1												
535									1												
536									1												
537									1												
538									1												
539									1												

Sand & Water																			
Obs #	Social Behaviors				Cognitive Behaviors									Notes					
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules						Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	S	P	G		F	C	E	D	G		U		A	H	G	R			
540											1								
541											1								
542											1								
543	1				1														
544	1				1														
545		1			1														
546											1								

Sand & Water																		
	Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
		Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R		
PERCENTAGE	12.5%	546	68		22.3%	546	122	70	2	2	0		64.1%	546	350			
TOTAL OBSERVATIONS		546	50			546	70	546	2	546	2			546	0	0		
RECORDED OBSERVATIONS		546	78			546	2	546	2	546	0			546	1	0		
SAND & WATER RESULTS																		

Sand & Water																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	196	196	196		196	196	196	196	196								
breakdown	0.35	0.255	0.4		0.62	0.36	0.01	0.01	0								

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
1									1					11/5 - 60 degrees, balmy partly sunny 10am, 20 children
2									1					
3									1					
4	1			1										
5									1					
6	1					1								
7		1				1								
8									1					
9									1					
10			1				1							
11	1					1								
12			1	1										
13	1						1							
14									1					
15									1					
16	1					1								11/6 - 55 degrees, foggy 11am, 16 children
17			1	1										
18			1	1										
19	1			1										
20			1	1										
21		1		1										
22			1				1							
23		1		1										
24									1					
25			1	1										
26			1	1										
27									1					
28									1					

Play Deck															
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes	
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules							
	S	P	G	F	C	E	D	G	U	A	H	G	R		
29	1					1			1						
30															
31									1						
32									1						
33									1						
34									1						
35									1						
36									1					11/7 - 55 degrees 10am - 17 children	
37									1						
38									1						
39									1						
40									1						
41									1						
42									1						
43									1						
44									1						
45									1						
46									1						1
47									1						1
48									1						
49									1						
50									1						
51									1						
52									1						
53	1														
54									1					11/10 - 45 degrees, mild 10am - 18 children	
55									1						
56									1						

Play Deck																
Obs #	Social Behaviors				Cognitive Behaviors										Notes	
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules							Unoccupied
	S	P	G		F	C	E	D	G		U		A	H	G	R
57											1					
58											1					
59											1					
60											1					
61											1					
62											1					
63											1					
64											1					
65											1					
66											1					
67	1															
68	1															
69	1															
70	1															
71	1															
72		1			1											
73											1					
74											1					11/11 - 45 degrees, dry, little windy 4pm
75											1					
76											1					
77											1					
78											1					
79											1					
80											1					
81											1					
82											1					
83											1					
84	1															

Play Deck																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
85											1						11/12 - 45degrees, mild 10am, 17 children
86											1						
87											1						
88											1						
89											1						
90											1						
91											1						
92											1						
93											1						
94											1						
95											1						
96											1						
97											1						
98											1						
99	1								1								
100	1								1								
101											1						
102	1				1												
103		1			1												11/13 - 45 degrees 11am, 19 children
104		1			1												
105											1						
106											1						
107											1						
108											1						
109											1						
110											1						
111											1						
112											1						
113	1				1												
114											1						

Play Deck																	
Obs #	Social Behaviors				Cognitive Behaviors									Notes			
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules						Unoccupied	Anxious	Hovering
	S	P	G		F	C	E	D	G		U		A	H	G	R	
115											1						
116											1						
117											1						
118											1						
119											1						11/14 - 50 degrees, mild
120											1						11am, 20 children
121											1						
122											1						just back in from fire drill
123											1						
124											1						
125	1				1												girl lying down sucking thumb
126	1				1												boy lying on back
127											1						
128		1					1										
129											1						
130											1						
131											1						
132											1						
133											1						
134											1						
135											1						11/24 - 40 degrees
136											1						some snow on ground
137											1						11am, 16 children
138											1						
139											1						
140											1						

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
141									1					
142		1		1										using shovels
143		1		1										
144		1		1										
145									1					
146									1					
147	1			1										
148									1					
149									1					
150									1					
151									1					
152									1					
153									1					
154									1					
155									1					11/25 - 40 degrees
156									1					snow on ground
157									1					11am, 14 children
158									1					
159	1			1										
160									1					
161									1					
162									1					
163									1					
164	1			1										
165	1			1										
166									1					
167									1					
168									1					
169									1					
170									1					

Play Deck													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
171									1				11/26 - 40 degrees damp, snow on ground 10am, 13 children
172									1				
173	1					1							
174									1				
175									1				
176									1				snow angel
177	1				1								
178			1	1									
179									1				
180									1				
181									1				
182									1				
183									1				
184									1				
185									1				
186									1				
187									1				
188									1				
189									1				12/1 - 38 degrees, windy, no snow 11am , 18 children
190									1				
191									1				
192		1		1									
193	1			1									
194									1				
195									1				
196									1				
197									1				
198									1				

Play Deck													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
199									1				
200									1				
201									1				
202									1				
203									1				
204									1				
205									1				
206	1			1									
207			1				1						
208									1				12/3 - 40-45 degrees, dry and mild
209									1				11am, 21 children
210									1				
211									1				
212									1				
213									1				
214									1				
215									1				
216									1				
217									1				
218									1				
219									1				
220									1				
221									1				
222	1			1									sitting on seat
223		1		1									
224	1			1									
225	1			1									
226									1				
227									1				

Play Deck																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
228		1			1												12/4 - 35 - 40 degrees, breezy, cloudy 11am, 22 children
229			1		1												
230	1				1												
231											1						
232											1						
233											1						
234											1						
235											1						
236											1						
237											1						
238											1						
239											1						
240											1						
241											1						
242											1						
243											1						
244											1					12/9 - 35 - 40 degrees Some wet snow 11am, 8 children other classroom on field trip	
245											1						
246											1						
247											1						
248											1						
249	1				1												
250											1						
251											1						
252											1						
253											1						

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
254	1			1					1					
255									1					
256									1					
257									1					
258									1					
259									1					
260									1					
261									1					
262									1					
263									1					
264	1													
265	1													
266	1			1					1					12/15 - 38 degrees previous snowfall, melting, slushy spots 11am, 10 children
267									1					
268									1					
269									1					
270									1					
271									1					
272									1					
273									1					
274									1					
275									1					
276	1													
277	1													
278	1			1					1					12/16 - 30 degrees, cold 11am, 10 children
279									1					
280									1					
281									1					

Play Deck													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
282									1				
283									1				
284									1				
285									1				
286									1				
287									1				
288									1				
289									1				
290									1				
291									1				
292									1				
293									1				
294									1				
295									1				
296									1				
297									1				
298									1				12/17 - 35 degrees, mild
299									1				11am, 20 children
300		1		1									
301		1		1									
302		1		1									
303		1		1									
304									1				
305		1		1									
306		1		1									
307	1			1									
308									1				
309		1		1									
310	1			1									
311									1				

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
312									1					
313									1					
314	1			1										
315		1		1										
316		1		1										
317									1					
318		1		1										
319		1		1										
320									1					
321		1		1										1/5 - 38 degrees, partly cloudy 11am, 19 children
322		1		1										
323	1			1										
324	1			1										
325									1					
326									1					
327									1					
328									1					
329									1					
330									1					
331	1			1										siting on bench
332									1					
333		1		1										
334		1		1										
335		1		1										
336									1					
337			1	1										
338			1	1										
339			1				1							
340			1				1							
341	1			1										

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
342	1			1										
343									1					
344									1					
345									1					1/6 - 30 degrees, sunny, no wind 11am, 17 children
346									1					
347									1					
348	1			1										
349	1			1										
350	1			1										
351									1					
352									1					
353									1					
354									1					
355									1					
356									1					
357									1					
358									1					
359									1					
360	1			1										
361	1			1										
362									1					
363									1					
364									1					
365									1					
366									1					
367									1					
368									1					
369									1					1/30 - 30 degrees

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
370									1					a lot of snow with very few clear patches
371									1					11am, 12 children
372									1					
373									1					
374									1					
375									1					
376									1					
377									1					
378									1					
379									1					
380									1					
381									1					
382									1					
383									1					
384									1					
385									1					
386									1					
387									1					
388									1					
389		1		1										2/2 - 25 degrees
390		1		1										snow on site
391		1		1										11am, 20 children
392		1		1										
393		1		1										
394		1		1										eating snow and icicles
395		1		1										
396		1		1										
397		1		1										

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
398			1	1										tasting, licking and eating snow and ice pieces
399		1		1										
400		1		1										
401		1		1										
402		1		1										
403			1	1										
404			1	1										
405			1	1										
406		1		1										
407			1	1										
408			1	1										
409			1	1										
410			1	1										
411			1	1										
412			1	1										
413		1		1										2/10 - 40 degrees, cloudy
414									1					11am, 7 children
415									1					other classroom on fieldtrip
416									1					
417									1					
418									1					
419									1					
420									1					
421									1					
422									1					
423									1					

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
424			1	1										lying over and under bench
425			1	1										
426									1					
427									1					
428									1					
429									1					
430									1					
431									1					
432									1					
433	1			1										
434	1			1										
435		1		1										2/11 - 50 degrees, cloudy 10am, 20 children
436	1			1										
437									1					
438	1			1										
439	1			1										
440									1					
441									1					
442									1					
443									1					
444									1					
445									1					
446									1					
447									1					
448									1					
449									1					
450									1					
451									1					
452									1					

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
453			1	1										hide under bench
454									1					
455			1	1										
456			1	1										
457			1	1										
458									1					
459	1			1										2/16 - 30 degrees, windy
460	1			1										11am, 8 children
461									1					other classroom on fieldtrip
462									1					
463									1					not much snow but very icy sections
464									1					
465									1					
466	1			1										
467									1					
468									1					
469									1					
470									1					
471									1					
472									1					
473									1					2/18 - 30 degrees, windy, snow flurries
474									1					11am, 12 children
475	1			1										
476	1			1										
477									1					
478									1					

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
479									1					
480									1					
481		1		1										kicking tree, pulling branches
482									1					
483									1					
484									1					
485									1					
486									1					
487									1					2/19 - 35 degrees
488									1					10am, 11 children
489									1					
490									1					
491	1			1										
492									1					
493									1					
494									1					
495									1					
496									1					
497									1					
498									1					
499									1					
500									1					
501									1					
502									1					
503									1					2/26 - 40 degrees, mild
504									1					11am, 21 children
505	1			1										
506	1			1										

Play Deck														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
507		1		1										
508		1		1										
509		1		1										
510		1		1										
511			1	1										
512			1	1										
513		1		1										
514		1		1										
515		1		1										
516			1	1										
517			1	1										
518		1		1										
519		1		1										
520									1					
521	1			1										siting on bench
522	1			1										resting on bench
523									1					
524									1					
525									1					
526									1					
527									1					2/27 - 45 degrees
528									1					11am, 20 children
529									1					
530									1					
531									1					
532									1					
533									1					
534									1					
535									1					
536	1			1										
537		1		1										

Play Deck																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
538		1			1												
539	1				1												
540											1						
541											1						
542											1						
543											1						
544											1						
545											1						
546											1						

Play Deck																					
PERCENTAGE	TOTAL OBSERVATIONS	RECORDED OBSERVATIONS	Obs #	Social Behaviors			Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble		Notes	
				Solitary	Parallel		Group	Functional	Constructive	Exploratory	Dramatic										Games w. Rules
				S	P		G	F	C	E	D										G
12.1%	546	66																			
10.6%	546	58																			
7.0%	546	38																			
26.7%	546	146																			
0.2%	546	1																			
1.3%	546	7																			
1.5%	546	8																			
0.0%	546	0																			
70.3%	546	384																			
0.0%	546	0																			
0.0%	546	0																			
0.0%	546	0																			
0.0%	546	0																			
PLAY DECK RESULTS																					

Play Deck																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	162	162	162		162	162	162	162	162								
breakdown	0.41	0.36	0.235		0.9	0.01	0.04	0.05	0								

Art Easels																	
Obs #	Social Behaviors				Cognitive Behaviors									Notes			
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules						Unoccupied	Anxious	Hovering
	S	P	G		F	C	E	D	G		U		A	H	G	R	
1												11/5 - 60 degrees, balmy partly sunny 10am, 20 children					
2																1	
3																1	
4																1	
5																1	
6																1	
7																1	
8																1	
9																1	
10																1	
11																1	
12																1	
13																1	
14																1	
15																1	
16												11/6 - 55 degrees, foggy 11am, 16 children					
17																1	
18																1	
19																1	
20																1	
21																1	
22																1	
23																1	
24																1	
25																1	
26																1	
27																1	
28	1				1											cleaning off dampness	

Art Easels													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
29									1				
30									1				
31	1			1									
32									1				
33									1				
34									1				
35									1				
36									1				11/7 - 55 degrees 10am - 17 children
37									1				
38									1				
39									1				
40									1				
41									1				
42									1				
43									1				
44									1				
45									1				
46									1				
47									1				
48									1				
49									1				
50									1				
51									1				
52									1				
53									1				
54									1				11/10 - 45 degrees, mild 10am - 18 children
55									1				
56									1				

Art Easels													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
57									1				
58									1				
59									1				
60	1			1									
61									1				
62									1				
63									1				
64									1				
65									1				
66									1				
67									1				
68									1				
69									1				
70									1				
71									1				
72									1				
73									1				
74									1				11/11 - 45 degrees, dry, little windy 4pm
75									1				4pm, 25 children
76									1				
77									1				
78									1				
79									1				
80									1				
81									1				
82									1				
83									1				
84									1				

Art Easels																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
85											1						11/12 - 45degrees, mild 10am, 17 children
86											1						
87											1						
88											1						
89											1						
90											1						
91											1						
92											1						
93											1						
94											1						
95											1						
96											1						
97											1						
98											1						
99											1						
100											1						
101											1						
102											1						
103											1						11/13 - 45 degrees 11am, 19 children
104											1						
105											1						
106											1						
107											1						
108											1						
109											1						
110											1						
111											1						
112											1						
113											1						
114											1						

Art Easels																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
115											1						
116											1						
117											1						
118											1						
119											1						11/14 - 50 degrees, mild
120											1						11am, 20 children
121											1						
122											1						just back in from fire drill
123											1						
124											1						
125											1						
126											1						
127											1						
128											1						
129											1						
130											1						
131											1						
132											1						
133											1						
134											1						
135											1						11/24 - 40 degrees
136											1						some snow on ground
137											1						11am, 16 children
138											1						
139	1				1												
140	1				1												rub with snow
141	1				1												

Art Easels														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
142									1					
143									1					
144									1					
145									1					
146									1					
147									1					
148									1					
149									1					
150									1					
151									1					
152	1			1										
153	1			1										
154	1			1										
155									1					11/25 - 40 degrees
156									1					snow on ground
157									1					11am, 14 children
158									1					
159									1					
160									1					
161									1					
162									1					
163									1					
164									1					
165									1					
166									1					
167									1					
168									1					
169									1					
170									1					

Art Easels																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
171			1		1												11/26 - 40 degrees damp, snow on ground 10am, 13 children
172			1		1												
173			1		1												
174											1						wiping snow on easel
175											1						
176											1						
177											1						
178											1						
179											1						
180											1						
181											1						
182											1						
183											1						
184											1						
185											1						
186											1						
187											1						
188											1						
189											1						12/1 - 38 degrees, windy, no snow 11am , 18 children
190											1						
191											1						
192											1						
193											1						
194											1						
195											1						
196											1						
197											1						
198											1						

Art Easels																			
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes		
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules										
	S	P	G		F	C	E	D	G		U		A	H	G	R			
199											1								
200											1								
201											1								
202											1								
203											1								
204											1								
205											1								
206											1								
207											1								
208	1										1						12/3 - 40-45 degrees, dry and mild		
209											1							11am, 21 children	
210											1								
211											1								
212											1								
213											1								
214											1								
215											1								
216											1								
217											1								
218											1								
219											1								
220																			putting sand on easel and wiping off
221											1								
222											1								
223											1								
224											1								
225	1																		
226	1																		

Art Easels														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
227									1					
228									1					12/4 - 35 - 40 degrees, breezy, cloudy 11am, 22 children
229									1					
230									1					
231									1					
232									1					
233									1					
234									1					
235									1					
236									1					
237									1					
238									1					
239									1					
240									1					
241									1					
242									1					
243									1					
244									1					12/9 - 35 - 40 degrees Some wet snow 11am, 8 children other classroom on field trip
245									1					
246									1					
247									1					
248									1					
249									1					
250	1			1										
251	1			1										wiping the snow

Art Easels																									
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes											
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules																	
	S	P	G	F	C	E	D	G	U	A	H	G	R												
252									1																
253									1																
254									1																
255									1																
256									1																
257									1																
258									1																
259									1																
260									1																
261									1																
262	1																								
263	1																								
264	1																								
265	1																								
266	1																								
267	1																								
268	1																								
269	1																								
270	1																								
271	1																								
272	1																								
273	1	1																							
274	1	1																							
275																									
276																									
277																									
278																									

Art Easels																		
Obs #	Social Behaviors				Cognitive Behaviors									Notes				
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules						Unoccupied	Anxious	Hovering	Aggression
	S	P	G		F	C	E	D	G		U		A	H	G	R		
279											1						11am, 10 children	
280											1							
281											1							
282											1							
283											1							
284											1							
285											1							
286											1							
287											1							
288											1							
289			1		1												climbing on snow underneath easel	
290											1							
291			1		1													
292			1		1													
293			1		1													
294											1							
295											1							
296											1							
297											1							
298											1							12/17 - 35 degrees, mild 11am, 20 children
299											1							
300	1				1													
301											1							
302											1							
303		1			1												rubbing snow on easel	
304	1				1													
305		1			1													
306		1			1													
307											1							

Art Easels													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
308									1				
309									1				
310									1				
311									1				
312									1				
313									1				
314									1				
315									1				
316									1				
317									1				
318									1				
319									1				
320									1				
321									1				1/5 - 38 degrees, partly cloudy 11am, 19 children
322									1				
323									1				
324									1				
325									1				
326									1				
327									1				
328									1				
329	1			1									
330	1			1									
331									1				
332									1				
333									1				
334									1				
335									1				
336									1				
337									1				

Art Easels														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
338									1					
339									1					
340									1					
341									1					
342									1					
343									1					
344									1					
345	1			1										1/6 - 30 degrees, sunny, no wind 11am, 17 children
346	1			1										
347	1			1										
348		1		1										
349		1		1										
350	1			1										
351									1					
352									1					
353									1					
354									1					
355									1					
356									1					
357									1					
358									1					
359									1					
360									1					
361									1					
362									1					
363									1					
364									1					
365									1					
366									1					
367									1					

Art Easels																
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G	F	C	E	D	G	U			A	H	G	R	
368									1							
369									1							1/30 - 30 degrees a lot of snow with very few clear patches 11am, 12 children
370									1							
371									1							
372									1							
373									1							
374									1							
375									1							
376									1							
377									1							
378									1							
379									1							
380									1							
381									1							
382									1							
383									1							
384									1							
385									1							
386									1							
387									1							
388									1							
389									1							2/2 - 25 degrees snow on site 11am, 20 children
390									1							
391									1							
392									1							
393									1							
394									1							
395									1							
396									1							

Art Easels														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
397									1					
398									1					
399									1					
400	1			1										climbing onto easel
401	1			1										because snow is high enough
402									1					
403									1					
404									1					
405									1					
406									1					
407									1					
408									1					
409									1					
410									1					
411									1					
412									1					
413									1					2/10 - 40 degrees, cloudy
414									1					11am, 7 children
415									1					other classroom on fieldtrip
416									1					
417									1					
418									1					
419									1					
420	1			1										climbing onto easel
421									1					because snow is high enough
422									1					
423									1					

Art Easels													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
424									1				
425									1				
426									1				
427									1				
428									1				
429									1				
430									1				
431									1				
432	1			1									
433									1				
434									1				
435									1				2/11 - 50 degrees, cloudy
436									1				10am, 20 children
437									1				
438									1				
439									1				
440									1				
441									1				
442									1				
443									1				
444									1				
445									1				
446									1				
447									1				
448									1				
449									1				
450									1				
451									1				
452									1				
453									1				

Art Easels														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
454									1					
455									1					
456									1					
457									1					
458									1					
459									1					2/16 - 30 degrees, windy
460									1					11am, 8 children
461									1					other classroom on fieldtrip
462									1					
463									1					not much snow but very icy sections
464									1					
465									1					
466									1					
467									1					
468									1					
469									1					
470									1					
471									1					
472									1					
473									1					2/18 - 30 degrees, windy, snow flurries
474									1					11am, 12 children
475									1					
476									1					
477									1					
478	1			1										climbing; trying to get to top

Art Easels																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
479											1						
480											1						
481											1						
482											1						
483											1						
484											1						
485											1						
486											1						
487	1									1						2/19 - 35 degrees 10am, 11 children	
488										1							
489										1							
490										1							
491										1							
492										1							
493										1							
494										1							
495										1							
496										1							
497										1							
498										1							
499										1							
500										1							
501										1							
502										1							
503										1						2/26 - 40 degrees, mild 11am, 21 children	
504										1							
505										1							
506										1							
507										1							

Art Easels													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
508									1				
509									1				
510									1				
511									1				
512									1				
513									1				
514									1				
515									1				
516									1				
517									1				
518									1				
519									1				
520									1				
521									1				
522									1				
523									1				
524									1				
525									1				
526									1				
527									1				2/27 - 45 degrees
528									1				11am, 20 children
529									1				
530									1				
531									1				
532									1				
533									1				
534									1				
535									1				
536									1				
537									1				
538									1				

Art Easels														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
539									1					
540									1					
541									1					
542									1					
543									1					
544									1					
545									1					
546	1													

[illegible]

Art Easels																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	42	42	42		42	42	42	42	42								
breakdown	0.667	0.14	0.19		0.98	0.02	0	0	0								

Pathway																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G								
1		1			1												11/5 - 60 degrees, balmy partly sunny 10am, 20 children
2		1			1												
3		1			1												
4		1			1												
5		1			1												
6		1			1												
7		1			1												
8		1			1												
9		1			1												
10		1			1												
11		1			1												
12		1			1												
13	1				1												
14		1			1												
15		1			1												
16										1						11/6 - 55 degrees, foggy 11am, 16 children sack jumping child hurt, huddled to see	
17			1					1									
18										1							
19			1		1												
20		1			1												
21			1		1												
22			1		1												
23			1		1												
24										1							
25										1							
26										1							

Pathway																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
27											1						
28			1		1												
29			1						1								
30											1						
31											1						
32			1		1												trikes and running
33			1		1												
34			1		1												
35			1		1												
36		1			1												11/7 - 55 degrees 10am - 17 children
37		1			1												
38		1			1												
39		1			1												
40		1			1												
41		1			1												
42		1			1												
43		1			1												
44		1			1												
45		1			1												
46			1		1												
47			1		1												
48		1			1												
49		1			1												
50		1			1												
51		1			1												
52		1			1												
53		1			1												
54		1			1												11/10 - 45 degrees, mild

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
55		1		1										10am - 18 children
56		1		1										
57		1		1										
58		1		1										
59			1	1										
60		1		1										
61		1		1										
62			1	1										
63			1	1										
64		1		1										
65		1		1										
66		1		1										
67		1		1										
68		1		1										
69		1		1										
70		1		1										
71		1		1										
72		1		1										
73		1		1										
74		1		1										11/11 - 45 degrees, dry, little windy 4pm
75		1		1										4pm, 25 children
76		1		1										
77		1		1										trikes, running
78			1	1										scooter
79		1		1										
80			1	1										they ride trikes on the soft climber landing area
81		1		1										
82		1		1										

Pathway																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G								
83		1			1												
84		1			1												
85		1			1												11/12 - 45degrees, mild 10am, 17 children
86		1			1												
87		1			1												
88		1			1												
89		1			1												
90		1			1												
91		1			1												
92		1			1												
93		1			1												
94		1			1												
95		1			1												
96		1			1												
97		1			1												
98			1		1												
99			1		1												
100			1		1												
101			1		1												
102		1			1												
103										1							11/13 - 45 degrees 11am, 19 children
104										1							
105										1							
106										1							
107	1				1												
108										1							
109										1							
110										1							

Pathway													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
111									1				
112									1				
113									1				
114									1				
115		1		1									
116		1		1									
117		1		1									
118									1				
119			1	1									11/14 - 50 degrees, mild
120			1	1									11am, 20 children
121			1	1									
122			1	1									just back in from fire drill
123			1	1									
124			1	1									crashing trikes into gate to get through
125		1		1									
126		1		1									
127		1		1									
128		1		1									
129		1		1									
130		1		1									
131		1		1									
132		1		1									
133			1	1									
134		1		1									
135									1				11/24 - 40 degrees
136									1				some snow on ground

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
137									1					11am, 16 children
138									1					
139		1		1										shoveling path
140		1		1										
141		1		1										
142									1					
143									1					
144									1					
145									1					
146									1					
147		1		1										
148		1		1										
149			1	1										
150			1	1										
151		1		1										
152									1					
153									1					
154									1					
155		1		1										11/25 - 40 degrees
156		1		1										snow on ground
157		1		1										11am, 14 children
158		1		1										
159		1		1										
160									1					
161									1					
162									1					
163									1					
164		1		1										
165		1		1										
166		1		1										
167		1		1										

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G						
168		1		1										
169		1		1										
170		1		1										
171			1	1										11/26 - 40 degrees damp, snow on ground 10am, 13 children shoveling
172			1	1										
173			1	1										
174			1	1										
175									1					
176									1					
177			1	1										
178									1					
179									1					
180									1					
181									1					
182									1					
183	1			1										
184									1					
185		1		1										
186		1		1									no trikes out today running on path	
187			1	1										
188			1	1										
189			1	1										12/1 - 38 degrees, windy, no snow 11am , 18 children bikes out
190		1		1										
191		1		1										
192		1		1										
193			1	1										

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
194		1		1										
195		1		1										
196			1	1										
197		1		1										
198		1		1										
199		1		1										
200		1		1										
201		1		1										
202		1		1										
203		1		1										
204		1		1										
205		1		1										
206		1		1										
207		1		1										
208			1				1							12/3 - 40-45 degrees, dry and mild
209			1					1						11am, 21 children
210			1	1										biking is school bus
211			1					1						
212			1	1										follow the leader "follow me boys" in line
213			1	1										
214		1		1										
215		1		1										
216		1		1										
217			1	1										
218		1		1										
219		1		1										
220		1		1										

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G						
221		1		1										
222		1		1										
223		1		1										
224		1		1										
225		1		1										
226									1					
227	1			1										
228			1	1										12/4 - 35 - 40 degrees, breezy, cloudy
229		1		1										11am, 22 children
230		1		1										
231		1		1										trikes, running
232		1		1										
233		1		1										
234		1		1										
235		1		1										
236		1		1										
237		1		1										
238		1		1										
239		1		1										
240									1					
241									1					
242									1					
243									1					
244		1		1										12/9 - 35 - 40 degrees
245		1		1										Some wet snow
246		1		1										11am, 8 children

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
247		1		1										other classroom on field trip
248		1		1										
249		1		1										bikes
250	1			1										
251									1					
252									1					
253									1					
254									1					
255									1					
256									1					
257									1					
258									1					
259									1					
260									1					
261									1					
262									1					
263									1					
264									1					
265									1					
266									1					12/15 - 38 degrees
267									1					previous snowfall, melting, slushy spots
268			1	1										11am, 10 children
269			1	1										
270			1	1										
271			1	1										running
272			1					1						no bikes out
273			1					1						
274		1		1										
275		1		1										

Pathway													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
276		1						1					
277		1						1					
278		1		1									12/16 - 30 degrees, cold
279		1		1									11am, 10 children
280		1		1									
281	1			1									bikes
282		1		1									
283		1		1									
284		1		1									
285		1		1									
286									1				
287									1				
288			1	1									chase, running
289									1				
290									1				
291		1		1									
292	1			1									
293									1				
294		1		1									
295		1		1									
296		1		1									
297		1		1									
298									1				12/17 - 35 degrees, mild
299									1				11am, 20 children
300									1				
301									1				no bikes out
302									1				
303									1				

Pathway													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
304									1				
305									1				
306									1				
307									1				
308									1				
309									1				
310									1				
311									1				
312									1				
313									1				
314									1				
315		1		1									shoveling the path
316									1				
317									1				
318									1				
319									1				
320									1				
321		1		1									1/5 - 38 degrees, partly cloudy
322		1		1									11am, 19 children
323		1		1									
324		1		1									
325		1		1									
326		1		1									
327		1		1									running
328		1		1									no bikes out
329		1		1									
330		1		1									
331		1		1									using shovels
332		1		1									
333		1		1									

Pathway																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
334		1			1												
335		1			1												
336		1			1												
337		1			1												
338		1			1												
339		1			1												
340		1			1												
341			1		1												
342			1		1												
343			1		1												
344			1		1												
345		1			1												1/6 - 30 degrees, sunny, no wind 11am, 17 children
346		1			1												
347		1			1												
348		1			1												
349		1			1												
350		1			1												
351		1			1												
352		1			1												
353		1			1												
354		1			1												
355		1			1												
356			1		1												
357			1		1												
358			1		1												
359			1		1												
360			1		1												
361			1		1												
362			1		1												
363		1			1												

Pathway													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
364		1		1									
365		1		1									
366		1		1									
367		1		1									
368		1		1									
369		1		1									1/30 - 30 degrees a lot of snow with very few clear patches 11am, 12 children
370		1		1									
371		1		1									
372		1		1									
373		1		1									
374		1		1									
375		1		1									
376		1		1									
377		1		1									
378									1				
379									1				
380									1				
381									1				
382									1				
383									1				
384									1				
385		1		1									
386		1		1									
387		1		1									
388		1		1									
389		1		1									2/2 - 25 degrees snow on site 11am, 20 children
390		1		1									
391		1		1									
392		1		1									

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
393		1		1										bikes out, path clear
394		1		1										
395		1		1										bikes stay on hard concrete path
396		1		1										
397		1		1										
398		1		1										
399		1		1										
400		1		1										
401		1		1										
402		1		1										
403			1	1										
404			1	1										
405		1		1										
406		1		1										
407		1		1										
408		1		1										
409		1		1										
410			1	1										
411			1	1										
412			1	1										
413		1		1										2/10 - 40 degrees, cloudy
414		1		1										11am, 7 children
415			1	1										other classroom on fieldtrip
416			1	1										
417			1	1										
418			1	1										no bikes out
419			1	1										rides in wagon pulled by teacher

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
420			1	1										
421			1	1										bench is wagon stop
422			1	1										
423			1	1										
424			1	1										running
425		1		1										
426			1	1										chasing
427			1	1										
428			1	1										
429			1	1										
430			1	1										
431			1	1										
432			1	1										
433			1	1										
434			1	1										
435		1		1										2/11 - 50 degrees, cloudy
436		1		1										10am, 20 children
437		1		1										
438		1		1										bikes out
439		1		1										
440		1		1										
441		1		1										
442		1		1										
443		1		1										
444		1		1										
445		1		1										
446		1		1										
447		1		1										
448		1		1										
449		1		1										

Pathway																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
450		1			1												
451		1			1												
452		1			1												
453		1			1												bench is likely place to find
454		1			1												resting, hurt, or waiting area
455		1			1												
456		1			1												
457		1			1												
458		1			1												
459		1			1												2/16 - 30 degrees, windy
460		1			1												11am, 8 children
461		1			1												other classroom on fieldtrip
462		1			1												
463		1			1												not much snow but very icy sections
464		1			1												
465		1			1												bikes on main path only
466		1			1												and scooter
467		1			1												
468		1			1												
469		1			1												
470		1			1												
471											1						
472											1						

Pathway													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
473			1	1									2/18 - 30 degrees, windy, snow flurries
474			1	1									11am, 12 children
475			1	1									
476			1	1									bikes, scooters
477		1		1									running
478		1		1									
479			1	1									
480			1	1									
481			1	1									
482		1		1									
483		1		1									
484		1		1									
485			1	1									
486			1	1									
487		1		1									2/19 - 35 degrees
488		1		1									10am, 11 children
489			1	1									
490			1	1									
491		1		1									bikes
492		1		1									
493			1	1									
494			1	1									
495			1	1									
496			1	1									
497		1		1									
498		1		1									
499		1		1									
500		1		1									
501		1		1									
502		1		1									

Pathway																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
503		1			1												2/26 - 40 degrees, mild
504		1			1												11am, 21 children
505		1			1												
506		1			1												
507		1			1												no bikes were out
508		1			1												
509		1			1												
510		1			1												
511		1			1												
512			1		1												down by the river
513		1			1												
514		1			1												
515		1			1												running around
516		1			1												
517		1			1												
518		1			1												
519		1			1												
520		1			1												
521			1					1									air planes
522		1			1												
523		1			1												
524		1			1												
525			1		1												
526			1		1												
527		1			1												2/27 - 45 degrees
528		1			1												11am, 20 children
529		1			1												
530		1			1												
531		1			1												

Pathway														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
532		1		1										
533		1		1										
534		1		1										
535		1		1										
536			1	1										
537			1	1										
538			1	1										
539			1	1										
540		1		1										
541		1		1										
542		1		1										
543		1		1										
544		1		1										
545		1		1										
546		1		1										

[illegible]

Pathway																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	444	444	444		444	444	444	444	444								
breakdown	0.02	0.73	0.26		0.98	0	0	0	0.02								

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G	F	C	E	D	G	U	A	H	G	R				
1										1							11/5 - 60 degrees, balmy partly sunny
2										1							10am, 20 children
3										1							
4			1		1												brushing with branches on sidewalk
5	1					1											
6	1					1											looking at bushes
7		1		1													looking at trees
8			1			1											
9										1							
10										1							
11										1							
12										1							
13										1							
14										1							
15										1							
16											1						11/6 - 55 degrees, foggy
17											1						11am, 16 children
18			1	1													
19			1					1									
20			1	1													playing ball in grass
21										1							running, screaming
22			1					1									
23			1					1									
24			1	1													
25										1							
26										1							

Landscape													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
27									1				
28									1				
29	1					1							
30			1	1									
31									1				
32									1				
33	1					1							
34									1				
35									1				
36		1		1									11/7 - 55 degrees 10am - 17 children
37		1		1									
38			1	1									
39			1	1									
40			1	1									
41			1	1									
42		1		1									
43		1		1									
44									1				
45									1				
46									1				
47									1				
48	1			1									
49	1			1									
50		1		1									
51		1		1									
52		1		1									
53		1		1									
54									1				11/10 - 45 degrees, mild

Landscape														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
55									1					10am - 18 children
56									1					
57									1					
58									1					
59									1					
60		1		1										
61		1		1										
62		1		1										
63		1		1										
64		1		1										
65		1		1										
66		1		1										
67		1		1										
68		1		1										
69		1		1										
70		1		1										
71		1		1										
72		1		1										
73		1		1										
74			1	1										11/11 - 45 degrees, dry, little windy 4pm
75									1					
76	1					1								
77									1					throwing leaves, playing catch
78			1	1								1		touching/walking through bushes
79			1	1										ball toss - hit boy on head with hand on purpose
80									1					

Landscape													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
81									1				
82									1				
83									1				
84									1				
85									1				
86									1				
87									1				
88									1				
89									1				
90									1				
91									1				
92									1				
93									1				
94		1		1									
95		1		1									
96		1		1									
97		1		1									
98		1		1									
99		1		1									
100		1		1									
101		1		1									
102		1		1									
103		1		1									
104		1		1									
105		1		1									
106		1		1									
107		1		1									
108			1	1									

11/12 -
45degrees, mild
10am, 17 children

11/13 - 45
degrees
11am, 19 children

Landscape														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
109			1	1										
110			1	1										
111			1					1						duck, duck, goose
112			1					1						
113			1					1						
114			1	1										
115			1	1										
116			1	1										
117			1	1										
118			1	1										
119									1					11/14 - 50 degrees, mild
120									1					11am, 20 children
121									1					
122									1					just back in from fire drill
123									1					
124									1					
125									1					
126									1					
127									1					
128									1					
129	1					1								climbing in planters
130									1					
131									1					
132									1					
133			1				1							hamsters
134									1					
135		1		1										11/24 - 40 degrees

Landscape																		
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules									
	S	P	G		F	C	E	D	G		U			A	H	G	R	
136		1			1													some snow on ground
137			1		1													11am, 16 children
138			1		1													
139			1			1												shoveling snow
140			1			1												
141			1			1												
142			1			1												snowman or castle
143			1			1												
144			1		1													
145			1		1													
146		1			1													
147		1			1													
148		1			1													
149			1		1													
150			1		1													
151		1			1													
152											1							
153											1							
154											1							
155		1			1													11/25 - 40 degrees
156		1			1													snow on ground
157		1			1													11am, 14 children
158		1			1													
159		1			1													
160		1			1													
161		1			1													
162		1			1													
163		1			1													
164		1			1													
165		1			1													

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
166		1			1												
167		1			1												
168		1			1												
169		1			1												
170		1			1												
171											1						11/26 - 40 degrees damp, snow on ground
172			1		1												10am, 13 children
173											1						
174			1		1												
175	1						1										eating snow
176	1				1												drawing with sticks in snow
177	1						1										in planter box
178			1			1											fill pail w. snow
179			1			1											loose parts in snow
180			1			1											
181			1		1												
182			1		1												
183	1					1											making snowballs
184		1			1												
185			1		1												
186		1			1												
187											1						
188											1						
189											1						12/1 - 38 degrees, windy, no snow
190		1			1												11am , 18 children

Landscape														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
191	1			1										
192	1			1										
193	1			1										playing at drain at end of creek bed
194		1		1										
195									1					
196									1					planters as toy box
197			1				1							
198			1				1							
199									1					
200									1					
201									1					
202									1					touching mulch at tree
203	1					1								
204									1					climbing in planters
205		1		1										lying on log bench
206	1			1										
207									1					
208									1					12/3 - 40-45 degrees, dry and mild
209									1					11am, 21 children
210									1					
211									1					
212									1					
213		1		1										
214		1		1										
215		1		1										
216			1	1								1	1	3 boys pushing/punching

Landscape														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
217			1	1								1	1	play fighting/kicking
218			1				1					1	1	
219			1	1										boys in planter
220			1				1							fighting-teacher intervention NOT OK
221			1	1										running in the grass
222			1	1									1	pile on
223			1	1										
224									1					
225									1					
226			1	1										running
227									1					
228									1					12/4 - 35 - 40 degrees, breezy, cloudy
229									1					11am, 22 children
230									1					
231									1					
232			1			1								touching retaining wall
233			1			1								touching trees that are bare with buds
234			1			1								touching trees at knoll
235			1	1									1	wrestling in grass
236			1	1										kicking ball
237			1			1								retaining wall
238			1			1								touching, reaching, bending branches of trees
239			1			1								
240			1			1								

Landscape														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
S	P	G	F	C	E	D	G	U	A	H	G	R		
241								1						
242								1						
243								1						
244		1		1									12/9 - 35 - 40 degrees	
245		1		1									Some wet snow	
246		1		1									11am, 8 children	
247		1		1									other classroom on field trip	
248		1		1										
249		1		1									shoveling	
250		1		1									sit in planter and shovel	
251		1		1										
252		1		1										
253		1		1										
254		1		1										
255	1			1										
256								1						
257								1						
258		1		1										
259		1		1										
260		1		1										
261		1		1									hitting trees with shovel	
262		1		1									teacher intervention - not hurt living thing	
263		1		1										
264		1		1										

Landscape														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G						
265		1		1										
266			1	1										12/15 - 38 degrees
267			1	1										previous snowfall, melting, slushy spots
268			1	1										11am, 10 children
269			1	1										
270			1	1										making snowman
271									1					eating snow
272									1					jumping in puddles
273									1					hugging snow
274		1		1										
275			1	1										kicking soccer ball back and forth
276			1	1										lying with face in snow looking and tasting
277			1					1						
278			1	1										12/16 - 30 degrees, cold
279			1	1										11am, 10 children
280			1				1							
281			1				1							
282			1	1										crawling around in the snow
283		1		1										playing with snowman that was left
284		1		1										icy areas
285		1		1										pretending ice rink

Landscape																
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied			Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G	F	C	E	D	G	U			A	H	G	R	
286		1		1												
287		1		1												
288		1		1												
289		1		1												
290		1		1												
291		1		1												
292		1		1												
293		1		1												
294		1		1												
295		1		1												
296		1		1												
297		1		1												
298		1		1												12/17 - 35 degrees, mild
299		1		1												11am, 20 children
300		1		1												shoveling in planter
301		1		1												
302		1		1												
303		1		1												
304		1		1												
305		1		1												
306			1	1												moving ginormous snowball around whole area
307			1	1												
308			1	1												
309			1	1												
310			1	1												
311			1	1												
312			1	1												running
313			1	1												

Landscape																		
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied					Notes		
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules									
	S	P	G		F	C	E	D	G		U			A	H	G	R	
314			1		1													kicking, jumping on large snowball
315			1		1													
316			1		1													
317			1		1													
318			1		1													
319			1		1													collecting down branches to add to snowball pile
320			1			1												started making snow castle
321			1		1													1/5 - 38 degrees, partly cloudy
322			1		1													
323			1		1													pulling each other on sleds
324			1		1													
325			1		1													building snow man parts
326			1		1													
327			1		1													
328			1			1												
329			1			1												
330			1			1												waving bush twigs
331			1			1												
332			1			1												
333			1			1												
334			1		1													
335			1		1													kicking ball
336			1		1													
337		1			1													

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G	F	C	E	D	G	U	A	H	G	R				
338		1		1													
339			1	1													
340		1		1													
341		1		1													
342		1		1													
343			1	1													
344		1		1													
345			1	1													1/6 - 30 degrees, sunny, no wind
346			1	1													11am, 17 children
347			1	1													
348			1	1													
349			1	1													making snowballs
350			1	1													
351			1	1													
352			1	1													
353			1	1													
354			1	1													
355			1	1													
356			1	1													
357			1	1													
358			1	1													
359			1	1													
360			1	1													
361			1	1													
362			1	1													
363			1	1													
364			1	1													
365			1	1													
366			1	1													
367			1	1													

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G								
368			1	1													
369			1	1													1/30 - 30 degrees a lot of snow with very few clear patches
370			1	1													11am, 12 children
371			1				1										
372			1				1										
373			1	1													
374			1				1										fighting shark (snowpile)
375			1				1										
376			1			1											angels in snow
377			1	1													
378			1	1													poking holes in snow
379			1	1													
380			1	1													teacher crawling
381			1	1													kids pile on
382			1	1													snow wrestling
383			1	1													
384			1	1													
385			1	1													
386		1		1													
387		1		1													
388		1		1													
389			1	1													2/2 - 25 degrees
390			1	1													snow on site
391			1	1													11am, 20 children
392			1	1													
393			1	1													climbing up and down snowpiles

Landscape														
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules						
	S	P	G	F	C	E	D	G	U	A	H	G	R	
394			1	1										
395			1	1										throw snowballs at retaining wall
396			1	1										
397			1	1										shoveling and digging in snow
398			1	1										
399			1	1										
400			1	1										
401		1		1										
402			1	1										
403			1	1										
404			1	1										
405			1	1										
406			1	1										
407			1	1										
408			1	1										
409			1	1										
410			1	1										
411			1	1										
412			1	1										
413									1					2/10 - 40 degrees, cloudy
414									1					11am, 7 children
415									1					other classroom on fieldtrip
416									1					
417									1					
418									1					
419									1					
420									1					

Landscape													
Obs #	Social Behaviors			Cognitive Behaviors					Unoccupied	Anxious	Hovering	Aggression	Rough & Tumble
	Solitary	Parallel	Group	Functional	Constructive	Exploratory	Dramatic	Games w. Rules					
	S	P	G	F	C	E	D	G	U	A	H	G	R
421									1				
422									1				
423		1					1						checking out icy patches
424		1		1									shoveling
425		1		1									
426		1		1									
427									1				
428									1				
429		1		1									
430		1		1									
431		1		1									
432		1		1									
433		1		1									
434		1		1									
435									1				2/11 - 50 degrees, cloudy
436									1				10am, 20 children
437		1		1									
438		1		1									
439		1		1									
440		1		1									
441		1		1									
442		1		1									
443		1		1									
444		1		1									
445			1			1							touching tree limbs and buds
446			1			1							
447			1	1									throwing ball
448			1	1									

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
449			1		1												
450			1		1												
451		1			1												
452		1			1												
453		1			1												
454		1			1												
455		1			1												
456		1			1												
457		1			1												
458		1			1												
459											1						2/16 - 30 degrees, windy
460											1						11am, 8 children
461											1						other classroom on fieldtrip
462											1						
463											1						not much snow but very icy sections
464											1						
465											1						
466		1			1												checking ice
467											1						teacher says ok, but on knees
468											1						
469											1						
470											1						
471	1							1									found footprint "deer?"
472											1						

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
473		1			1												2/18 - 30 degrees, windy, snow flurries
474			1		1												11am, 12 children
475			1		1												
476			1		1												catching ball
477		1			1												bouncing ball
478		1			1												
479											1						
480											1						
481											1						
482			1		1												kicking ball
483			1		1												
484			1		1												
485			1		1												
486			1		1												
487											1						2/19 - 35 degrees
488											1						10am, 11 children
489											1						
490											1						
491											1						
492											1						
493											1						
494											1						
495											1						
496											1						
497		1			1												
498		1			1												
499											1						
500											1						
501											1						
502											1						

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G								
503			1		1												2/26 - 40 degrees, mild
504			1		1												11am, 21 children
505			1		1												
506			1		1												chase
507										1							kicking ball
508										1							
509			1		1												digging in dirt
510										1							
511		1			1												
512		1			1												sitting in planters
513			1		1												running around grass
514			1		1												
515			1		1												
516			1		1												
517			1		1												
518			1		1												climbing retaining wall
519			1		1												
520		1			1												
521			1		1												
522			1		1												
523			1		1												
524			1				1										play fighting
525			1		1												
526			1		1												
527		1			1												2/27 - 45 degrees
528		1			1												11am, 20 children
529		1			1												
530			1		1												

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors										Notes		
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
531			1		1												
532		1			1												
533		1			1												
534		1			1												
535											1						
536											1						
537											1						
538											1						
539											1						
540											1						
541	1				1												
542		1			1												
543			1		1												
544			1		1												
545			1		1												
546			1		1												

Landscape																					
PERCENTAGE	TOTAL OBSERVATIONS	RECORDED OBSERVATIONS	Obs #	Social Behaviors			Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble		Notes	
				Solitary	Parallel		Group	Functional	Constructive	Exploratory	Dramatic										Games w. Rules
				S	P		G	F	C	E	D										G
3.7%	546	20																			
29.7%	546	162																			
39.4%	546	215																			
62.1%	546	339																			
3.3%	546	18																			
4.2%	546	23																			
1.8%	546	10																			
1.3%	546	7																			
27.3%	546	149																			
0.0%	546	0																			
0.0%	546	0																			
0.7%	546	4																			
0.9%	546	5																			
LANDSCAPE RESULTS																					

Landscape																	
Obs #	Social Behaviors				Cognitive Behaviors						Unoccupied		Anxious	Hovering	Aggression	Rough & Tumble	Notes
	Solitary	Parallel	Group		Functional	Constructive	Exploratory	Dramatic	Games w. Rules								
	S	P	G		F	C	E	D	G		U		A	H	G	R	
occupied	397	397	397		397	397	397	397	397								
breakdown	0.05	0.41	0.542		0.85	0.05	0.06	0.03	0.02								

APPENDIX D:

TEACHER QUESTIONNAIRE RESULTS

SORTING TABLE

	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	3	3	3	3	2	2	1	2	19	2.38
Parallel Play	2	2	3	3	3	2	2	1	18	2.25
Group Play	1	1	3	3	1	2	3	3	17	2.13
Cognitive Behaviors										
Functional Play	1	2	3	3	4	4	5	3	25	3.13
Constructive Play	4	2	3	3	5	4	4	2	27	3.38
Exploratory Play	3	3	3	3	4	4	3	4	27	3.38
Dramatic Play	1	1	1	3	3	3	1	5	18	2.25
Games with Rules	2	1	1	3	5	4	2	1	19	2.38
Other Behaviors										
Anxious										
Hovering			X		X	X		X	4 of 8	
Aggression										
Rough & Tumble										
No Behavior Present										
Unoccupied Element	X	X	X	X					4 of 8	

TREE STUMPS

	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	2	2	2	3	1	2	2	3	17	2.13
Parallel Play	3	2	1	3	1	1	3	2	16	2.00
Group Play	1	2	3	3	1	3	1	1	15	1.88
Cognitive Behaviors										
Functional Play	3	1	3	2	4	4	3	5	25	3.13
Constructive Play	4	1	3	2	3	4	4	3	24	3.00
Exploratory Play	2	1	3	2	4	4	2	4	22	2.75
Dramatic Play	1	1	2	2	3	4	1	2	16	2.00
Games with Rules	4	2	2	2	3	4	5	1	23	2.88
Other Behaviors										
Anxious										
Hovering										
Aggression										

Rough & Tumble				X					1 of 8
No Behavior Present									
Unoccupied Element		X	X		X				3 of 8

CLIMBER	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	2	1	3	1	1	2	1	1	12	1.50
Parallel Play	1	2	3	3	2	2	2	2	17	2.13
Group Play	3	3	3	3	3	2	3	3	23	2.88
Cognitive Behaviors										
Functional Play	4	2	3	3	1	4	5	4	26	3.25
Constructive Play	4	2	3	3	2	4	1	5	24	3.00
Exploratory Play	4	2	3	3	1	4	3	3	23	2.88
Dramatic Play	3	2	2	3	2	3	4	2	21	2.63
Games with Rules	3	3	2	3	3	3	2	1	20	2.50
Other Behaviors										
Anxious			X					X	2 of 8	
Hovering										
Aggression			X					X	2 of 8	
Rough & Tumble			X					X	2 of 8	
No Behavior Present										
Unoccupied Element										

GRASSY KNOLL	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	3	1	3	3	3	2	1	1	17	2.13
Parallel Play	2	2	2	1	3	2	2	2	16	2.00
Group Play	1	2	3	1	3	3	3	3	19	2.38
Cognitive Behaviors										
Functional Play	4	2	3	1	5	4	1	5	25	3.13
Constructive Play	4	3	3	1	5	4	2	3	25	3.13
Exploratory Play	4	3	3	1	5	4	3	4	27	3.38
Dramatic Play	4	2	2	1	5	3	5	2	24	3.00
Games with Rules	4	3	2	1	5	3	4	1	23	2.88
Other Behaviors										
Anxious										
Hovering										
Aggression	X								1 of 8	

Rough & Tumble	X	X					X		3 of 8
No Behavior Present									
Unoccupied Element			X						1 of 8

DRY CREEK BED	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	1	1	2	3	3	2	3	3	18	2.25
Parallel Play	3	1	3	3	3	2	2	2	19	2.38
Group Play	2	1	3	3	1	2	1	1	14	1.75
Cognitive Behaviors										
Functional Play	2	3	3	3	5	4	1	3	24	3.00
Constructive Play	2	3	3	3	4	4	3	4	26	3.25
Exploratory Play	3	3	3	3	5	4	4	5	30	3.75
Dramatic Play	2	4	2	3	5	4	5	2	27	3.38
Games with Rules	1	2	2	3	4	3	1	1	17	2.13
Other Behaviors										
Anxious										
Hovering										
Aggression										
Rough & Tumble										
No Behavior Present										
Unoccupied Element	X	X			X				3 of 8	

SAND & WATER	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	3	2	3	0	3	2	1	2	16	2.00
Parallel Play	2	2	3	0	3	2	3	3	18	2.25
Group Play	1	2	3	0	3	3	2	1	15	1.88
Cognitive Behaviors										
Functional Play	3	4	3	0	5	4	2	4	25	3.13
Constructive Play	4	4	3	0	4	4	3	3	25	3.13
Exploratory Play	4	4	3	0	5	4	4	5	29	3.63
Dramatic Play	3	2	2	0	4	4	5	2	22	2.75
Games with Rules	2	2	2	0	3	3	1	1	14	1.75
Other Behaviors										
Anxious										
Hovering										
Aggression							X	X	2 of 8	

Rough & Tumble
No Behavior Present
Unoccupied Element

PLAYDECK	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	3	1	3	3	2	1	2	3	18	2.25
Parallel Play	2	1	3	3	3	2	1	2	17	2.13
Group Play	1	2	3	3	3	3	3	2	20	2.50
Cognitive Behaviors										
Functional Play	3	2	3	3	5	4	4	2	26	3.25
Constructive Play	4	2	3	3	4	4	3	3	26	3.25
Exploratory Play	2	1	3	3	5	4	1	4	23	2.88
Dramatic Play	4	4	4	3	5	4	4	5	33	4.13
Games with Rules	5	4	4	3	5	4	5	1	31	3.88
Other Behaviors										
Anxious			X						1 of 8	
Hovering			X						1 of 8	
Aggression			X						1 of 8	
Rough & Tumble			X						1 of 8	
No Behavior Present										
Unoccupied Element		X							1 of 8	

ART EASELS	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	2	1	3	3	3	1	3	3	19	2.38
Parallel Play	1	1	2	3	3	1	2	2	15	1.88
Group Play	3	1	1	3	3	1	1	1	14	1.75
Cognitive Behaviors										
Functional Play	1	1	3	3	3	3	2	2	18	2.25
Constructive Play	1	1	3	3	4	3	4	3	22	2.75
Exploratory Play	1	2	3	3	3	3	5	4	24	3.00
Dramatic Play	1	1	3	3	3	3	1	5	20	2.50
Games with Rules	1	1	1	3	4	3	3	1	17	2.13
Other Behaviors										
Anxious			X						1 of 8	
Hovering										
Aggression										

Rough & Tumble				X					1 of 8
No Behavior Present									
Unoccupied Element	X	X			X	X		X	5 of 8

PATHWAY	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	2	1	3	0	2	2	1	1	12	1.50
Parallel Play	1	1	3	0	2	2	3	2	14	1.75
Group Play	3	1	1	0	2	2	2	3	14	1.75
Cognitive Behaviors										
Functional Play	3	2	3	3	4	4	5	4	28	3.50
Constructive Play	2	2	3	3	4	4	3	3	24	3.00
Exploratory Play	2	1	3	3	4	4	2	5	24	3.00
Dramatic Play	3	2	2	3	4	4	1	2	21	2.63
Games with Rules	4	2	2	3	4	4	4	1	24	3.00
Other Behaviors										
Anxious		X		X					2 of 8	
Hovering				X					1 of 8	
Aggression	X	X		X					3 of 8	
Rough & Tumble	X								1 of 8	
No Behavior Present										
Unoccupied Element								X	1 of 8	

LANDSCAPE	Survey #								Average	Rating
	1	2	3	4	5	6	7	8		
Social Behaviors										
Solitary Play	2	2	3	3	2	2	0	1	15	1.88
Parallel Play	3	2	3	3	2	2	0	2	17	2.13
Group Play	1	2	3	3	2	2	0	3	16	2.00
Cognitive Behaviors										
Functional Play	3	3	3	3	4	4	0	5	25	3.13
Constructive Play	2	3	3	3	4	4	0	2	21	2.63
Exploratory Play	3	3	3	3	5	4	0	4	25	3.13
Dramatic Play	2	3	4	3	5	4	0	3	24	3.00
Games with Rules	2	4	4	3	2	4	0	1	20	2.50
Other Behaviors										
Anxious			X	X					2 of 8	
Hovering				X					1 of 8	
Aggression	X	X		X					3 of 8	

Rough & Tumble	X	X	X	3 of 8
No Behavior Present				
Unoccupied Element			X	1 of 8

Question 1: Do you ever restrict portions of the playground? If so, why?

Sometimes the stumps are not safe - especially with younger less coordinated children or when the stumps are not directly supervised.

No restrictions given ratio. We (I) choose to close one side if there is only one teacher.

As long as they are in the boundaries of the fence, they are okay. We never restrict areas.

We never restrict portions. The preschool playground is already very small for 14 children. Imagine when we have 28 or even all the rooms (4) are outside.

if there is ever only 1 teacher we close the gate and are either on the grassy side or on the playground side.

I do restrict them just a little where we planted tulips on the right side of playground near the fence (small portion).

The grassy knoll is restricted at times because of teacher to student ratios; sand and water is sometimes restricted if the ground is too wet

If it's too icy or wet. The children can slip, even when they walk. Snow seems to be ok to play on

Question 2: What is your philosophy on outdoor play?

Children make their own decisions on where they play - teachers supervise according to the child's ability physically.

Play is exploring, trying out things, socializing. As many types of activities as can be introduced to provide opportunities for physical and social/emotional development. The outdoors provides a natural background for children to explore and feel how they fit into the world.

Outdoor play is a necessity during the day (if possible). Running around, breathing fresh air and taking a break from the room is key for the children. It's refreshing.

I believe it is an important part of the curriculum. Fresh air, grossmotor, cognitive development, physical, emotional, social development. I feel that we need to have more time outside. We only get 30 minutes to one hour morning and afternoon.

It should be an experience where kids can be independent and explore. There should be enough space. Children should be able to develop gross motor skills.

I love for them to be outside as much as possible. Running, jumping, kicking the balls. Releasing energy. Getting fresh air.

Let the children explore in an unrestricted but safe environment.

They should play every day, weather permitting on a safe play structure or organized playground games like kickball.

Question 3: What activities are important for this age group?

Lots of area for running, exploring, discovering, observing - a space for dramatic play and lots of sensory - dirt, mud, rocks, sand.

Running, yelling, climbing, ball-play, pretend play, bikes, quiet reflection and exploration, hands-on with natural (wood, stone, plants, dirt) materials. Group and solitary play - kid's choice.

Anything hands-on. Anything that involves sensory materials or educational materials.

Climbing, running, tumbling, playing ball, riding bikes, read books, paint etc., outdoors is an extension of each indoor classroom.

Gross motor-running, climbing, jumping and turn taking - bikes, climbing structure etc.

run, jump, skip, ride bikes, throwing balls, hoops, creative play, sand area, tag. As much physical (safe) and creative activity as a child is able to do.

Cooperative lay with many possibilities to improve sensory motor skills.

Climbing, jumping, running.

Other comments:

How can we use the playground with fewer children? Over 15 children in the playground is too many. Only room for one group for truly safe and functional play. Perhaps this a teacher organizational issue.

More equipment and more space would be nice. I sense they are bored

Not enough space. Is toddler playground bigger than preschool? If yes, can we switch?

In all my experience with playground structures, I prefer recycled materials playground structures.

APPENDIX E:

IRB APPROVAL AND CONSENT FORM



Institutional Review Board for Human Participants

Cornell University
395 Pine Tree Rd., Suite 320
Ithaca, NY 14850
Telephone: 607 255-5138
Fax: 607 255-0758

NOTIFICATION OF EXEMPT CLASSIFICATION

Protocol ID# 08-10-048

To: Tammy J. Johnson
From: Susan R. Lewis, IRB Administrator
Date of approval: October 23, 2008 *(If you are using a consent form, enter this date at the bottom of it now.)*
Project(s): ***Cornell Child Care Center Outdoor Playscapes: A Post-Occupancy Evaluation of Preschool Children's Behavior***

A member of the IRB has reviewed the above referenced project and it is Exempt from the Federal Regulation for the Protection of Human Subjects (45 CFR 46). As detailed in the application you submitted, the involvement of human subjects in this research study is ***strictly limited*** to one or more of the exempted categories listed on the attached Citation sheet.

- * Exemption does not absolve the investigator from ensuring that the welfare of the research subjects is protected and that methods used and information provided to gain subject consent are appropriate to the activity. It is your responsibility as a researcher to familiarize yourself with and conduct the research in accordance with the ethical standards of the *Belmont Report*.
Belmont Report: <http://ohrp.osophs.dhhs.gov/humansubjects/guidance/belmont.htm>
- * You must immediately notify the IRB if any changes or modifications are made in the study's design or procedures that do not fall within one of the categories exempted from the regulations. Any such changes or modifications must be reviewed and approved by the IRB *prior* to their implementation.
- * You are not required to submit progress reports or requests for continuing review/approval to the IRB, unless you modify your study protocol.

Attachment: Exemption Citation

C: Lorraine Maxwell



Office of Research Integrity and Assurance

Cornell University
395 Pine Tree Rd., Ste. 320
Ithaca, NY 14850
Telephone: 607 255-5138
Fax: 607 255-0758

Issued on: 10-23-2008

Protocol ID# 08-10-048

Exemption Citation

Name of Investigator: **Tammy J. Johnson**

Title of Project: **Cornell Child Care Center Outdoor Playscapes: A Post-Occupancy Evaluation of Preschool Children's Behavior**

45 CFR 46.101 (b) Unless otherwise required by [DHHS] department or agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

- X (1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as
- (i) research on regular and special education instructional strategies; or
 - (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.
- X (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
- (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and
 - (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.
- ___ (3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if:
- (i) the human subjects are elected or appointed public officials or candidates for public office; or
 - (ii) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
- ___ (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.
- ___ (5) Research and demonstration projects which are conducted by or subject to the approval of [DHHS] department or agency heads, and which are designed to study, evaluate, or otherwise examine:
- (i) Public benefit or service programs;
 - (ii) procedures for obtaining benefits or services under those programs;
 - (iii) possible changes in or alternatives to those programs or procedures; or
 - (iv) possible changes in methods or levels of payment for benefits or services under those programs.
- ___ (6) Taste and food quality evaluation and consumer acceptance studies,
- (i) if wholesome foods without additives are consumed or
 - (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.



Cornell University

**Cornell Child Care Center Outdoor Playscapes:
A Post-Occupancy Evaluation of Preschool Children's Behavior**

**PARENTAL INFORMED CONSENT FORM
CORNELL CHILD CARE CENTER PRESCHOOL**

Dear Parent: Your child is invited to be in a research study about children's behavior on specific playground elements. We are asking that your child take part because your child is in the age group we want to study.

The study: The purpose of this study is to find out how children behave on specific playground elements such as the grassy knoll, the sorting table and the climber. It is designed to find which types of elements encourage certain behaviors. All preschool aged children will be silently observed for approximately one hour per day, 3-4 days per week, for 4 months.

Risks and benefits: We do not anticipate any risks to you or your child by participating in this study other than those encountered in day-to-day life. There are no benefits to you or your child by taking part in the study. No photographs or video will be used in this study.

Compensation: There is no compensation for participating in this study.

Confidentiality: The records of this study will be kept private. All children participating in this study will not be identified by name to either the investigator nor in the study itself.

The researcher for this study is Tammy J. Johnson. You may reach her at 351-4950, or tjj3@cornell.edu. The Faculty Supervisor is Associate Professor Lorraine Maxwell who can be reached at 255-1958. Please feel free to ask any questions you have now, or at any point in the future. If you have any questions or concerns about your child's rights as a research subject, you may contact the Cornell Institutional Review Board (IRB) at 607-255-5138, or you may access their website at <http://www.irb.cornell.edu>. You will be given a copy of this consent form for your records.

This consent form will be kept by the researcher for at least three years beyond the end of the study and was approved by the IRB on October 23, 2008.

Researcher signature _____ Date _____

Cornell University is an equal opportunity, affirmative action educator and employer.

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